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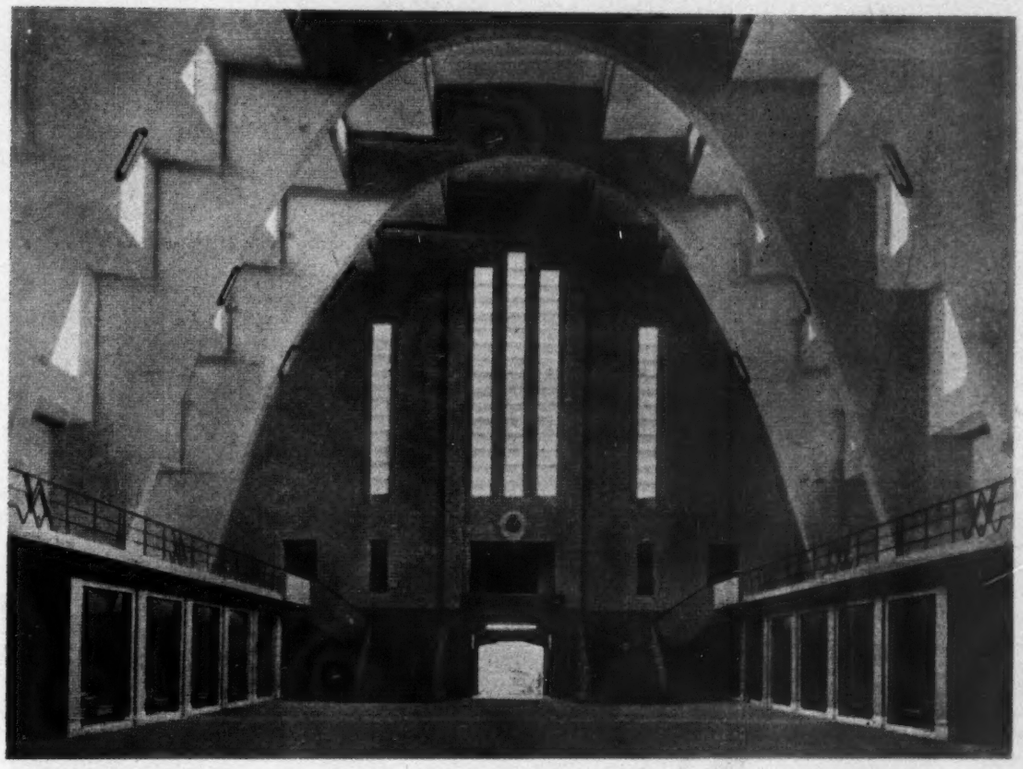


New Market Buildings, Nairobi.

MESSRS. C. RAND OVERY AND S. L. BLACKBURNE, F. and A.R.I.B.A., Architects.

(*See page* 490.)

MEETINGS

FRIDAY, *March* 24.

Town Planning Institute. Annual Dinner. At the Savoy Hotel, W.C.2.

College of Estate Management. Annual Dinner. At the First Avenue Hotel, W.C.1. 7 p.m.

Institution of Welding Engineers. Mr. H. W. Hawkins on "Design and Manufacture of Welded Steel Fabrications." At the Chamber of Commerce, Birmingham.

FRIDAY-MONDAY, *March* 24-27.

Bonar Law College, Ashridge. A Week-end Course on "Agriculture and the Preservation of Rural England." At Berkhamsted.

WEDNESDAY, *March* 29.

Liverpool Architectural Society. Mr. A. J. Penty on "Tradition and Modernism in Architecture." 6 p.m.

L.C.C. Central School of Arts and Crafts. Sir Banister Fletcher on "Roman Architecture—XI." 6 p.m.

Conference for Architects on Electric Lighting. Mr. Waldo Maitland on "Lighting of Theatres and Cinemas." 7 p.m.

Royal Society of Arts. Mr. John Littlejohns on "Colour Harmony." 8 p.m.

St. Paul's Ecclesiological Society. Mr. N. F. Cachemaille-Day on "Ecclesiastical Architecture in the Present Age." At 9, Conduit-street, W.1. 8 p.m.

Illuminating Engineering Society. Mr. J. F. Colquhoun on "Public Lighting." At Regent-street Polytechnic, W.1. 6 p.m.

Southern Counties Federation of B.T.E. Demonstrations of Interior Decoration Materials, of "Parso-Glaze" and "Watertex." At Messrs. Terry's, Cornfield-road, Eastbourne. 2.30 p.m.

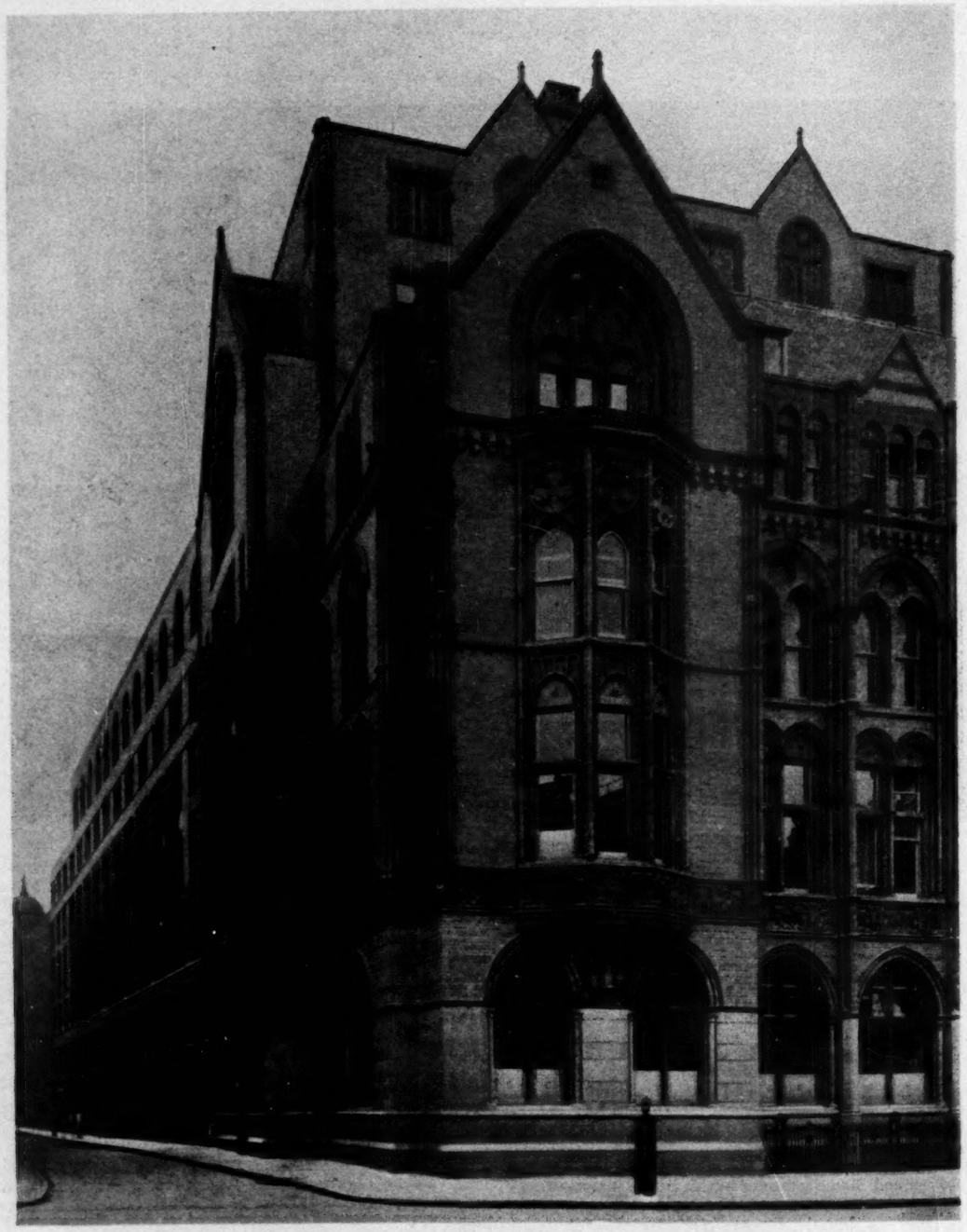
THURSDAY, *March* 30.

Society of Antiquaries of London. Miss Dorothy Liddell on "Excavations at Hembury, Devon." 8.30 p.m.

Essex, Cambridge and Herts Society of Architects. Joint Conference with Eastern Federation of Building Trades Employers. At Anderton's Hotel, Fleet-street, E.C.4. 12.30 p.m.

TUESDAY, *April* 4.

Architects' and Surveyors' Approved Society. Annual General Meeting. At 9, Conduit-street, W.1. 6.30 p.m.



Extension of the Prudential Assurance Company's Chief Office, Holborn Bars, E.C.

MESSRS. JOSEPH, Architects.

ANONYMITY IN COMPETITIONS.

FROM time to time the subject of architectural competitions crops up either by reason of a disgruntled participant, or because it is discussed at some congress or conference; the suggestions put forward are sometimes novel and sometimes fantastic, but rarely such as could be adopted without upsetting the existing regulations which, with all their theoretical imperfections, have been found to work reasonably well whenever they have been observed in the spirit rather than the actual letter of the law.

One of the principles which is generally accepted as desirable and essential, is that of anonymity; in theory it is adopted in order that the assessor or jury may be ignorant of the authorship of the designs from which he (or they) has (or have) to select the one which best interprets the programme and award other premiums to those which come nearest to the design placed first. Generally speaking this condition has been observed with a decent spirit of fair play, but in some recent competitions there have been designs which, either accidentally or otherwise, have had such obvious or special peculiarities of rendering or draughtsmanship as to leave very little doubt of their authorship; and in some cases their authors are by no means unknown men. There is, for instance, the exceptional case of a competitor imitating the method of presentation of a well-known architect in such a remarkable way that it is difficult to think it can have been purely accidental. But these methods do their authors no good, as can readily be seen. Take the first or most usual case, where a competitor has some more or less recognisable mannerism. In every public competition there are at least two or three sets of which one says, "That must be by X.," and it often is. What effect does this have on a competent assessor? We think it will not be contested that, unless the design is of superlative merit, it will not get a competitor the first premium, but it may turn the scale in the lesser awards, where two designs are of equal merit, in the same way that a well-drawn or clearly expressed plan is given a higher place than a similar scheme which is "grubby" looking and untidy.

The consideration of this problem inevitably raises the old question whether the task of the assessor is to select the composition which suitably expresses the essential facts of the competition or whether he has to look at the drawings as being the expression of the character and personality of the architect—in other words, to choose the right man for the job rather than a clever solution of the problem. This is an aspect of the question which is at the root of the whole matter, and it is one on which some definite pronouncement would be welcomed by a large number of architects.

But to return from this necessary digression, we repeat that the question whether the author of a competition design is unknown to the assessor, or whether the authorship can be guessed without much difficulty from the drawings, does not really have any appreciable effect on the final award. There is, however, another case—that of the deliberate imitation of the method of presentation of a well-known architect. Such an occurrence seems to raise the question whether it might not be preferable for drawings submitted in open competition to be signed by their authors. This problem of anonymity is one which has for some years been the subject of discussion abroad, and at several international congresses the suggestion has been made that in international competitions, the pretence of anonymity should be abandoned and all designs should be signed by their authors. It is claimed that this would "prevent abuses, political wirepulling, disguised bribery, and other attempts to influence the jury."

At first sight the idea of a public competition in which all the participants were known seems to load the dice in favour of the well-known master as against the unknown genius; in actual practice it would probably have two advantages in the case of international competitions with a mixed jury of architects and lay members. Firstly, it would prevent the pretence that the authors were unknown to members of the jury. In at least one recent international competition of importance the only member of the jury who did not know the names of competitors was the Englishman. And, secondly, it would make competitors directly responsible for any attempt to influence the jury in their own favour. International competitions are different in many respects from any others, and even if the condition of anonymity is strictly observed by every competitor, the way in which the designs are drawn and finished is so different in, say, England, France and the United States, that the country of origin of any design is quite obvious, and it therefore seems quite reasonable to go a step further and ask competitors to sign their work.

The objection which can be raised is, of course, that the unknown man does not get the same chance. But an international competition is, we think, not a subject for the unknown and inexperienced architect. It is usually for a large and intricate scheme, involving a considerable expenditure of public money and presenting difficulties in execution which could not be overcome by any but those who have a considerable amount of practical experience. In fact, we are inclined to agree with a suggestion, put forward by an Italian architect at the recent congress in Venice, that intending competitors in international competitions should be required to furnish a guarantee of their competence to carry out the work before being allowed to compete, which, when linked up with the signature of drawings by their authors, should do much to prevent the recurrence of unfortunate incidents in the awards made by juries in several international competitions of recent years.

The problem of anonymity in the ordinary public competition is more debatable. In theory, it is quite obviously the fairest method of choosing a design solely on its merits; in practice, it may lead to a plan by some unknown hand being wrongly ascribed to a well-known architect. As long as there is no intentional imitation of another man's peculiarities in the hope of securing a better place than could be gained on merit, there does not seem to be any great harm in this occasional error.

In fact, for purely national competitions, the existing system of anonymity seems to have justified itself, and we think that no advantage would be gained, either from the point of view of the assessor or the competitor, by any alteration in the existing conditions.

It seems, therefore, that the signature of competitive designs, in ordinary public competitions held in England under the existing conditions, would make little difference, but we think there is a strong case for the signature of work sent in for an international competition for the reasons which have been given above.

And as we understand that a revision of the existing regulations for international competitions is shortly to be undertaken by the Permanent International Committee of Architects, it is to be hoped that this question may be considered in its several aspects.

NOTES

Developments in Building. Dr. Oscar Faber's lecture at Monday's meeting of the R.I.B.A. (reported in this issue) was a valuable summary of much individual research in relation to the problems of modern building. The lecturer stressed particularly the need for economy of construction if the building industry is to regain its old-time prosperity, and made out a good case for the increased use of reinforced concrete for certain classes of buildings. Great interest was aroused by his description of a system of continuously moving shuttering, by means of which it is possible to build seven or more feet of work a day, as against the one foot which is the average rate of progress when old-fashioned methods of wooden shuttering are used. This invention seems to open up an important field for economical building.

Bridge Design. "The Architecture of Engineering Structures," the subject of a lecture given by Professor Husband before the Sheffield Society of Architects recently, should have stimulated much interest among architects. We think that much remains to be done for the concrete bridge in particular in regard to the architectural quality of its design. In many cases the bridges seem to halt between an arched and a trabeated treatment, or definitely suggest a merely plastic material or a strength of metal reinforcement. Probably the correct treatment from a theoretical point of view is a plastic treatment. We shall, no doubt, come to a better understanding of the possibilities of concrete, and instead of considering it as a heavy treatment come to look on reinforced concrete as the lightest of all possible methods of construction. The chief defects of most concrete bridges are the lack of good general form and the quality of good proportion of the parts.

Lighting Effects. Perhaps the lighting and illumination of buildings and advertisement signs will bring some compensation for the lack of good architecture. The lighting effects in and about Piccadilly Circus do at night detract attention from the lack of good architectural treatment of the Circus. But we note that a correspondent of the *Scotsman* criticises the introduction of lighting effects in Princes-street, Edinburgh, as follows: "Princes-street is still Edinburgh's greatest asset, and if it is further disfigured by ghastly lighting schemes it will fall to the level of a shopping street in an ordinary English city. Surely the citizens are not going to allow this to happen? I would suggest that those citizens who have the best interests of the town at heart should make their views known in no uncertain fashion, so as to prevent the Council perpetrating an act which will be irrevocable."

Art and Industry. The forthcoming Exhibition of Contemporary British Art in Industry, to be held by the Royal Academy of Arts in collaboration with the Royal Society of Arts at Burlington House, from January to March, 1935, is of importance, and particularly to architects and builders. H.M. the King will be President, and H.R.H. the Prince of Wales President of the General Committee, and of the Executive Committee. Following Sir William Llewellyn, P.R.A., we see the names of Sir Edwin Lutyens and Sir Giles Gilbert Scott. While the object is that which has occupied the Royal Society of Arts since its inception in 1754—to emphasise the connection between good design and manufacture—two sections are of special import to our readers: these are (Section 3), Interior Decoration and Furniture, and (Section 4) Domestic Equipment, including stoves, fireplaces and surrounds, and electric, gas and other lighting fittings. The textiles and ceramics also offer a wide and most interesting field of art design.

The County Surveyor of Herefordshire. After twenty-six years at County Surveyor and County Architect of Herefordshire, Mr. G. H. Jack, F.R.I.B.A., M.Inst.C.E., F.S.A., is retiring at the end of this month. As those interested in the preservation of the countryside are aware, Mr. Jack has done excellent service in that cause. He is secretary of the Herefordshire branch of the Council for the Preservation of Rural England, and is particularly interested in the preservation of bridges of archæological and historic value. In his capacity as County Bridge Master, he has formed a band of local craftsmen into a craft guild—the Bridge Brothers of Herefordshire—who are pledged to maintain a high standard of workmanship in bridge repair and construction. We understand that Mr. Jack will join the headquarters staff of the C.P.R.E. in a consulting and advisory capacity.

The Trevithick Centenary. In April occurs the centenary of the death of Richard Trevithick, the man who, following upon the efforts of Newcomen and Watt, invented the high-pressure steam engine, thus enlarging to an extraordinary extent the scope of power through steam. A meeting of representative members of the engineering profession at the Institution of Civil Engineers, has decided to honour the memory of Trevithick in a suitable manner. Amongst the suggestions that are being considered by the appointed Committee and, if possible, put into execution, are the erection of a memorial at his birthplace and also one at Pen-y-daren and one near Euston-road, where he ran locomotives; the holding of memorial services in Westminster Abbey and at Dartford Church; an exhibition connected with his life and work; the delivery of a memorial lecture; and the publication of a memorial volume. A fund has been opened to which the committee earnestly invites subscriptions from those in sympathy with its objects. Messrs. Coutts & Co., 440, Strand, W.C.2, have undertaken to act as treasurers.

Typical Departmental Floor — Theatre Lobby Floor.

Extension of the Prudential Assurance Company's Chief Office, Holborn Bars, E.C.

Messrs. Joseph, Architects.

Prudential Assurance Company's New Extension: Directors' Common Room.

MESSRS. JOSEPH, Architects.

Building Work and the Beer Duty.

IN our issue for February 17 we drew attention, in a note received from a correspondent, to the adverse effect of the beer duty upon building work in connection with licensed premises. Confirmation of our correspondent's view is forthcoming in a statement on "The Beer Duty" which we have received from Sir Edgar Sanders, director of the Brewers' Society. "Brewers," it is stated, "have been great supporters of the building trade ever since the War, as the improvement and rebuilding of licensed premises has made great strides in those years. Evidence was given before the Royal Commission on Licensing that 84 breweries had spent in the 3½ years prior to November, 1930, £8½ millions in the improvement of their licensed houses. It has been ascertained from returns supplied by over 70 per cent. of all the brewers that, in the twelve months ending September 30, 1932, as the result of the increased duty of 3ls. in September, 1931, there has been a decline of over £1½ millions in capital outlay on rebuildings and improvements as compared with the previous twelve months. As 80 per cent. of the cost of building contracts is expended on labour, the result of this cessation of work has resulted in a heavy loss of wages. In addition, contributions to the Health and Unemployment fund are lost."

Housing Helps.

THE "New Homes for Old" exhibition at 24, Grosvenor-place, gives a graphic record of the evils of the slums. The conditions under which many of our poor live are amongst the worst evils of our time. It is difficult to realise that probably not less than a quarter of our population live under such conditions as are here shown. Our earnest hopes must be for some extensive campaign of betterment. That houses for poor people may form one of the pleasantest features in our building areas is clearly seen in the excellent water colour drawings of a block of recent buildings by Mr. Louis de Soissons.

Protection of Rural Amenities.

A VERY opportune comment on the importance of the election of rural and urban district councils next month is made by Mr. Guy Dawber. This is an opportunity to impress on the electorate that on their representatives a great deal depends for the preservation of our rural amenities. Unless we get the right kind of representatives to deal with these things, our efforts will be largely discounted.

Building Figures.

The Board of Trade Journal for February 23 indicates that building is still on the upgrade, the index for estimated cost of plans passed by 146 local authorities in Great Britain for housing work in January standing at 136.2. This compares with 135.5 for December last and 87.6 for January, 1932. Plans passed for other buildings stood at 108.3, a decline from 137.1 in December but an improvement over the figure of 93.7 for January, 1932.

New Year Book.

THE Essex, Cambridge and Hertfordshire Architects have wisely decided to extend the field of publication of their year book by giving details of activities available through the society, and a number of interesting illustrations and useful subject matter have also been added to the lately issued year book. Some quite interesting illustrations which are here shown should lead to a further development of this feature. It would be very interesting if the three counties could issue, each year, some of the best instances of modern architecture which they can show.

New Market Buildings, Nairobi.

MESSRS. C. RAND OVERY AND S. L. BLACKBURNE, F. and A.R.I.B.A., Architects.

(*See pages* 481 *and* 488.)

GENERAL NEWS

Professional Announcements.

Mr. J. Raworth Hill, L.R.I.B.A., A.I.A.A., announces that after to-morrow (March 25) his offices will be at No. 11, Buckingham Gate, Westminster, S.W.1.

Mr. J. C. S. Mummery, A.R.I.B.A., announces that he is vacating his offices at 107, Great Russell-street, W.C.1, and as from March 25 his address will be 17, Southampton-street, Bloomsbury, W.C.1, where he will carry on his practice and also the practice of Messrs. Rowland Plumbe and Partners. The new telephone number will be: Holborn 2413.

Waterloo Bridge and the Engineers.

In connection with the reconditioning and corbelling-out of Waterloo Bridge, Messrs. Rendel, Palmer and Tritton have been appointed by the London County Council as engineers responsible for the work. As regards architectural collaboration with the engineers, this work is to be entrusted to the Council's architect.

New Chairman, London County Council.

Mr. E. M. Dence has been elected as the new chairman of the London County Council, in succession to Mr. Angus Scott. Mr. Dence has served for many years on the Housing Committee.

University of London Stonelaying.

The Senate of the University of London has learned with satisfaction that the King has intimated his intention of laying the foundation stone of the new University buildings on Monday, June 26, 1933, and that His Majesty will be accompanied by the Queen.

Broome Park, Betchworth.

Development in the form of shops, houses and estate roads is proposed on the north side at Broome Park, Betchworth, Surrey, which has recently changed ownership. An application has been made to the Reigate R.D.C. for a certificate under the provisions of the Town Planning Act to permit of this development.

Architects' Estates.

Mr. William Henry Beevers, A.R.I.B.A., of Leeds, who died on November 16, left estate of the gross value of £16,133, with net personalty £14,336.

Mr. Charles James Blomfield, F.R.I.B.A., of Great Horkesley, Essex (net personalty £3,735), left £5,142.

Sir John Soane's Museum.

Sir John Soane's Museum, 13, Lincoln's Inn-fields, W.C.2, was opened on March 1, and will be open free, 10.30 a.m. to 5 p.m. on Tuesdays, Wednesdays, Thursdays and Fridays during March, April, May, June, July, August, and at other times by cards obtained of the Curator.

Discovery of Mayan Ruins.

It is reported from Mexico City that ruins of what may be an entire Mayan city have been discovered on a ranch about 20 miles from the celebrated ruins at Chichen Itza, in Yucatan. Up to the present a castle covering an area of about 2½ acres and 150 ft. high has been found. The buildings are believed, says *The Times*, to have been buried by the Cacique Nachi Cocom to preserve it from destruction by early conquerors of Mexico.

St. Mary's Church, Rotherhithe.

St. Mary's, Rotherhithe, whose graceful spire in the style of Wren, and interior enriched by Grinling Gibbons, replaced the mediæval church in the early Eighteenth-Century, has been surveyed and found to be suffering badly from depredations of the deathwatch beetle and from structural defects. The wooden pillars of the church are riddled with beetle, and pieces of the heavy plaster ceiling fall frequently. £2,000 is needed for repairs, and an extra £1,000 for the fine but dilapidated Eighteenth-Century organ.

Alleged Forgery: Disclaimer of Identity.

Messrs. Dorman, Long and Co., Ltd., have been requested to state that Mr. Edwin (Eddie) Davies, formerly employed by them in their London office, and previously by Messrs. Bolckow, Vaughan and Co., Ltd., is in no way connected with the recent case of alleged forgery at Middlesbrough, in which another employee of the same surname was concerned.

Special Committee for Public Relations.

In addition to the list of subscriptions to this Fund given in former issues, the following contributions are announced:—

	£	s.	d.
Manchester Brick Manufacturers' Association, Ltd.	105	0	0
Roper, Son and Chapman	1	1	0
Gross, Sherwood and Heald, Ltd....	3	3	0
Nottingham and District Brick Association	25	0	0

The total now received is £2,390 14s. 10d.

COMPETITION NEWS

Competition for Flats, Stoke Newington.

The Stoke Newington B.C. has decided that a competition be held in respect of the preparation of plans for the flats to be erected on the Lordship-road and Lordship-terrace site, and that the following firms of architects be invited to compete: Mr. Wm. R. Davidge, Messrs. Hobden and Porri, Messrs. Howes and Jackman, Mr. E. M. Joseph, Messrs. E. C. P. and H. Monson, and Mr. Granville Streatfeild (in conjunction with Mr. Matthew J. Dawson). Premiums of £250 £100 and £50 are offered. Sir Robert Tasker, V.P.I.A.A.S., has been appointed assessor.

Competition for a Design in Granite.

In connection with the competition organised by the Architectural Association on behalf of the Cornish Quarry Masters' Association, the award of the prize will be announced and a criticism will be given at 6 p.m. on Tuesday, April 4, at the Architectural Association. Refreshments will be served from 5.30 p.m. The competition drawings will be on exhibition at the Architectural Association, 34-36, Bedford-square, from after the announcement of the award until Saturday, April 8, from 10 a.m. to 7 p.m. The object of the competition is to encourage the use of British granite, and particularly that of the Cornish area.

CURRENT COMPETITIONS

	Particulars published in	Sending in date
For designs "for cottage to be built at a minimum cost and at economic rent." Organised by the Building Centre, Ltd., 158, New Bond-street, W.1, from whom conditions (price 1s.) are available. Cash prize of £100. Assessors, the Board of Directors	Feb. 17	March 31
For designs for a conjectural exhibition hall for Manchester. Awards of £150 £75 and £25, made by Provincial Exhibitions, Ltd., City Hall, Manchester, from whom conditions are available free. Assessors, Messrs. H. S Fairhurst, A. J. Hope and J. H. Worthington, FF.R.I.B.A.	Feb. 17	April 13
Municipal Offices and Baths, Prestwick, for Borough Council. Premiums of £200, £100 and £50. Mr. A. Graham Henderson, F.R.I.B.A., assessor	March 3 } March 17 }	May 8.
Royal Society of Arts' Competitions in Industrial Design. Scholarships and prizes to value of £1,500. Details from Secretary, John-street, Adelphi, W.C.2	Feb. 24	May 20
International competition for layout of land on left bank of River l'Escaut, Antwerp, for Société Intercommunale de la rive Gauche, rue Arenberg 26, Antwerp, Belgium. Premiums of approx. £4,350, two of £2,175, and four of £1,087. Assessors include Dr. H. P. Berlage. Programme (fr. 20) and plans (fr. 80) obtainable from Société, but to be seen by callers at *The Builder* office	Dec. 2	May 31

WHERE LONDONERS LIVE

LECTURE AT THE R.I.B.A.

On Wednesday, March 15, Mr. A. G. S. Butler gave the second of a series of public lectures organised by the R.I.B.A. The title of the lecture was "Where do Londoners Live?"

After a few brief introductory remarks about the distribution of population in the London residential areas, the lecturer discussed the average suburban house, which he condemned on the grounds of unsuitability and ugliness. The three essential qualifications of a house, he said, were that it should be well built, convenient to live in and agreeable to look at inside or out, a fusion of these three qualities producing the most satisfactory result. After a more detailed criticism of the inherent defects of the typical ugly, inconvenient and expensive houses, possessing none of these essential qualifications, which constitute the homes of the average working Londoners, the lecturer went on to suggest that people should give up these uncomfortable homes, endured only for the sake of gentility, and live instead in the new modern flats or small improved suburban houses, the average accommodation of which is three bedrooms, a kitchen-scullery, and, substituted for the dining- and drawing-room, one intelligently planned living-room.

This, continued the lecturer, constituted the dwelling-unit of to-day. Theoretically, it was a rectangular box with the principal rooms on the south side and the offices on the north. The flat and the small house were tending to merge into one type, a glorification of this unit constituting the luxury flats of Mayfair, and a reduction constituting the excellent blocks of dwellings for poor people in the slums.

The lecturer admitted the disadvantages of monotony and lack of individuality arising from this standardisation, but emphasised all the advantages of cheapness, neatness, cleanliness, light, lack of noise, and ingenious labour-saving devices, and, having appreciated them from the practical point of view, he went on to show the scope offered by these new blocks of flats or groups of suburban houses for æsthetic effect, with their flat façades and well-proportioned flat windows outside, and, inside, the excellent appearance that comes from economy in decoration and the skilful use of beautiful materials.

There followed a discussion of some of the problems of residential dwellings, and, in particular, the garage problem. In the suburbs, said the lecturer, this could be solved comparatively simply and well, but in the centre of London the only solution was a public garage some way off or a communal garage attached to the block of flats. He suggested that a development of the future would be that the ground floor of the new box-like dwelling-unit should be a garage and the floors above it residential. Another problem was that of noise, and the lecturer showed that a number of interesting developments in sound-deadening materials and double windows would soon be applied to these modern blocks.

The lecture was illustrated by slides of the old and the new dwelling-units.

Légion d'Honneur.

For services rendered, the French Government have honoured Mr. Arthur J. Davis, F.R.I.B.A., with the Croix de Chevalier de la Légion d'Honneur.

Building Surveyorship Examination.

The R.I.B.A. statutory examination for the office of District Surveyor under the London Building Act, and the examination for the office of Building Surveyor under Local Authorities, will be held at the R.I.B.A., London, on May 3-5. The closing date for receiving applications for admission to the examinations, accompanied by the fee of £3 3s., is April 12.

CORRESPONDENCE

[While we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

The R.I.B.A. New Premises.

SIR,—With reference to the suggestion of a referendum on this question, may I point out that the members of the R.I.B.A., having duly elected their Council, are necessarily bound to accept the Council's decision without question? No complaint of unfairness to competitors has been made; only those who prepared a scheme are in a position to form any opinion upon this point.

Many competitors are of opinion that the adaptation of the site was determined prior to the competition, and that the committee appointed to deal with this added, for competitors' information, various suggestions, such as offices to let—stated "to be of vital importance"—together with other suggestions equally misleading.

Had the competition schedule of requirements been restricted to the purposes of an institute, as was immediately disclosed after the competition, there might have been (if any exists) less dissatisfaction.

Even if some members of the Institute do suggest lack of "something" in the elevations, let us hope for the best, and be permitted to have our grumble, confined so far as is possible within our own walls.

LIONEL U. GRACE.

London, E.C.4.

Architects and Official Work.

SIR,—I have to thank Mr. N. Martin Kaye for his lucid analysis of my letter "What Next?" Speaking casually, I would suggest that if the said letter contained any serious inaccuracies the proper authorities to disclose them would be the association referred to. As this association has not so far seen it necessary to do so, it is fair comment to assume that in the main my statements were correct.

My "constructive criticism" is surely fairly obvious in the final clause of my letter, that there should be no place for any official architect on a council devoted to the interests of private architects.

Mr. Martin Kaye admits that the breach referred to is so unconstitutional that it is "so extraordinary as to be almost ludicrous." Exactly what I had hoped I had made clear, but I fear my powers of expression are somewhat feeble and lacking in lucidity.

Mr. Kaye states that I have a right to express an opinion, and then proceeds to condemn me for doing so. Somewhat illogical, surely? As a friend of the profession, as well as a private member of it, I am anxious to have this injustice put right at the earliest possible moment. Gratitude for friendly acts is, however, now looked upon as rather a Victorian virtue. I am not concerned with dignity; the profession has suffered too keenly in recent years from the exercise of overmuch dignity.

Before sending my letter "What Next?" for publication I wrote to the Secretary of the Institute, sending available documentary evidence as to the approximate accuracy of my statements. So far I have received a "private and confidential" acknowledgment, but no vote of censure. My reason for making the information public was that representatives of the Allied Societies should have the fullest information possible on this subject before the next Allied Societies' Conference. My own experience of the decisions of the Allied Societies (under seal of confidence) has not been such as to inspire me with much hope of effective action on their part.

Might I be allowed to draw attention to Mr. Kaye's unconstitutional and irregular procedure in publicly expressing his opinion on an important matter still *sub judice*, while he tells us that he is officially connected with giving judgment on this matter, and, at the same time publicly informing us of his private opinions, which are obviously at variance with the mind of the Council of which he declares himself a representative? That private opinion actually disclosing a secret movement to destroy the work of 100 years of a great and noble Institute, which in two generations has raised our profession to the front rank of the arts of peace and civilisation. Which is the greater loyalty?

Mr. Martin Kaye suggests turning the profession into a series of mammoth commercial stores for the mass production of architecture. Hitherto I had understood that the Institute stood for architecture as an art, and welcomed the existence of individual artistic personalities in the ranks of the profession.

My experience of "getting together" is that it is all that is ever got. I would remind Mr. Martin Kaye that "publicity" is stated to be a valuable item in running a commercial concern.

WILLIAM DAVIDSON.

The Housing Bill.

SIR,—The Housing Bill which has just passed through the House of Commons is causing grave discontent and dissatisfaction. The Bill has completely reversed the policy of this country in respect of housing.

The 1919 Addison Act wrote into the constitution of local authorities the principle that they would be responsible for working-class housing. Local authorities were made legally and morally responsible for the housing of the working classes. The present Bill, however, has taken that responsibility, which was a statutory right of every citizen, out of the constitution of Great Britain.

The descent of the economy axe will undoubtedly mean greater and greater unemployment in the building and subsidiary industries. I do not know of more than three large building societies in this country prepared to make financial grants to speculative builders under the Bill which is about to become an Act of Parliament. It will not be possible for houses to be built for the working classes under this Bill.

As to the crying need for such houses, take Leeds as an example. In Leeds 34,800 houses which were built before 1844 are still inhabited by working people. These houses are in long, unbroken rows and narrow streets. The houses consist of two rooms with a cellar, usually unlighted, and have practically no provision for the storage of food.

Personal and domestic washing has to be done in the living room. There are no inside w.c.'s. There is no storage for household refuse. Outdoor ashpits and w.c.'s are used for groups of houses. The houses themselves are crowded together, seventy to eighty to an acre.

Conditions similar to those in Leeds are to be found in Liverpool, Birmingham, Glasgow, Manchester, and indeed in most large towns in this country. There is no attempt, as a consequence of the negatory legislation just passed through the House of Commons, to abolish these insanitary, infested slums.

R. COPPOCK, General Secretary,
National Federation of Building Trades Operatives.

The Value of the Surveyor.

SIR,—Mr. Nicol Bruce, W.S., Secretary of the Edinburgh Architectural Association, speaking at the social gathering of the East District of the Faculty of Surveyors of Scotland, Associates' Section, stated that the employment of a surveyor resulted in a saving of 5 per cent. to the building proprietor. I wonder what experience or authority he had for making this statement?

Those of us who were trained to do our own surveying could prove that his figure is incorrect. Some years ago I had a case where I employed a surveyor; the lowest estimate from the schedules being £2,200. The sum allowed by the client was £1,450. After various attempts to reduce the figure, the schedules had to be abandoned and the surveyor paid for his work. (His probable cost stated that the work could be done at the client's figure.) The only alteration in the scheme was the elimination of two small sculleries, and the work was completed in a first-class manner at the client's figure.

In every case where I have employed a surveyor to give a probable cost for bungalows and other work, his price has killed the job. Other architects who have ceased to employ surveyors have told me they had the same experience. When an architect does his own surveying he knows exactly what he intends to do and does not waste words saying what he thinks some other person intends to do. The surveyor is rarely a designer, and in his non-creative capacity is really paid at a better rate, relatively, than the designer.

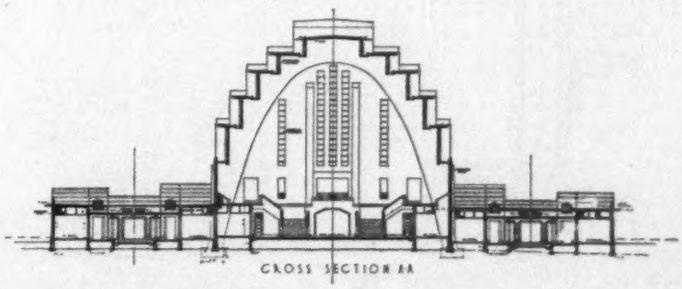
One effect of the establishment of the surveyor into the realm of the professional classes is that individual architects can do more work and the work is not spread over practising architects as it used to be forty years ago.

The surveyor will naturally uphold his profession, but his view is prejudiced by the fact that it is a question of making a living with him, and there is no compelling artistic impulse.

WILLIAM DAVIDSON.

SOUTH WALES INSTITUTE OF ARCHITECTS

The Western Branch of the South Wales Institute of Architects held their annual general meeting at Lovell's Café, Swansea. Mr. Edwin Smith, A.R.I.B.A., P.A.S.I., of Neath, was re-elected branch chairman, and the following officers were appointed to the branch committee: Hon. Secretary, Mr. J. Herbert Jones, F.R.I.B.A. (President, S.W.I.A.). Hon. Treasurer, Mr. G. R. H. Rogers, L.R.I.B.A. Members to serve on the Branch Committee: Messrs. O. S. Portsmouth, A.R.I.B.A.; Charles S. Thomas, F.R.I.B.A.; H. A. Ellis, F.R.I.B.A.; F. A. Broad, L.R.I.B.A.; E. E. Morgan, A.R.I.B.A. Student members: Messrs. Ernest Billings and W. Roy Thomson. The following members were appointed to serve on the Council of the South Wales Institute of Architects as from July 1, 1933: Messrs. C. S. Thomas, F.R.I.B.A.; G. R. H. Rogers, L.R.I.B.A.; Edwin Smith, A.R.I.B.A.; H. A. Ellis, F.R.I.B.A.; O. S. Portsmouth, A.R.I.B.A., and Mr. W. Roy Thomson, students' representative.



New Market Buildings, Nairobi.

MESSRS. C. RAND OVERY AND S. L. BLACKBURNE, F. and A.R.I.B.A., Architects

(*See pages* 481 *and* 490.)

ROYAL INSTITUTE OF BRITISH ARCHITECTS

RECENT DEVELOPMENTS IN BUILDING

A PAPER on this subject was read before the R.I.B.A. on Monday evening last by Mr. Oscar Faber, O.B.E., D.Sc., M.Inst.C.E. Mr. Sydney Tatchell, Vice-President, occupied the chair.

The lecturer said that economy of construction was a matter of paramount importance in these days. There were two main directions in which economy could be obtained. One was by using ordinary construction with greater knowledge, which enabled us to say where material could be reduced without reducing the general factor of safety, leaving untouched the places which were really the limiting considerations. The second was by investigating new methods of construction altogether, involving a development in the technique of building.

Under the ægis of the Steel Research Committee set up by the Department of Scientific and Industrial Research, tests had been carried out at the New Geological Museum at South Kensington under the supervision of the lecturer, directed to checking the actual stresses in a full-scale steel frame for a building of four stories. In the design of steel frames of this character it had been usual in the past to calculate the bending stresses in the stanchions on the basis of assuming the reactions of the beams to occur on the centres of the stanchion brackets. The eccentricity of this point from the centre line of the stanchion multiplied by the beam reaction in tons determined the bending moment in the stanchion. This assumption would be correct if this were the only means of attachment between the beam and the stanchion, but obviously a building constructed in this way would have no resistance to lateral forces such as wind and earth tremors, and would be entirely unstable. To give it this necessary stability against lateral forces the joints were given stiffness by adding top cleats between the beams and stanchions as well as bottom cleats, and it had been clear to those who had given thought to the matter that this modification must inevitably modify the correctness of the assumption as to the position of the reaction previously referred to, increasing its eccentricity and the bending moment in the stanchion with it.

The question had been, whether this increase was material or not. The so-called practical man had been disposed to argue that the increase was theoretical and not reflected in the actual conditions on the site. Those, however, who had studied the matter most closely had held that the increase was important. It was the object of the tests at the Geographical Museum to ascertain, among other things, what the order of this increase was (Fig. 1).

The connections in this case were of the minimum degree of stiffness usual in practice. The top cleats were connected to the beams, which consisted of two 24-in. by 7½-in. joists side by side, by only two ⅞-in. bolts. In actual practice connections of much greater stiffness were often employed, and there, of course, the effect would be even greater in proportion.

The general conclusion of this particular investigation had been to show that even with the comparatively light connection referred to, the bending stresses in the stanchions were practically doubled as compared with those calculated on the ordinary basis, and that an approximately correct estimation of the moment was obtained by adding to the moment ordinarily calculated one obtained by considering the top bolts stressed to eight tons per sq. in. in shear and multiplying the force so arrived at by the depth of the beam. It would not, of course, be justifiable to assume that this would be correct under all conditions, and further tests were in progress by the Department. He was obliged to the Department and to the chairman of the Steel Research Committee for permission to refer to this matter at this stage, and a fuller account would be found in the Second Report of the Steel Research Committee which was shortly due for publication.

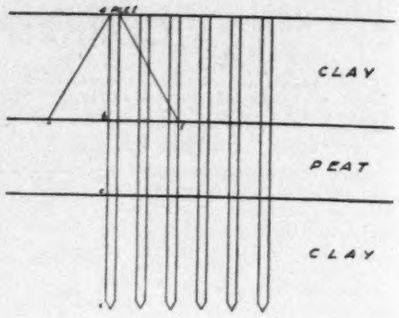


FIG. 2.

Referring to the distribution of pressure under bases and foundations and the stability thereof arising from this consideration, the lecturer said in the design of foundations it had been usual, and was still usual to-day, to assume that a concentrically loaded foundation exerted a uniform pressure over the area of the base, and that the stability might be determined by ascertaining whether the pressure so arrived at was one which gave conditions of stability in the soil at this particular depth.

The lecturer then described a series of tests on soils which he made in 1929 with the assistance of Mr. K. Montgomery-Smith, B.Sc., A.M.Inst.C.E., and the collaboration of Mr. R. H. H. Stanger, P.P.I.Struct.E., and said that it was of interest to consider some of the results which appeared to follow. In the first place, it became clear that from the point of view of the stability of the soil, a foundation on sand was going to permit a far higher average pressure than that based on considerations of stability of the sand at the edge of the base, and these experiments explained why Rankine's formula gave results so very much less than those justified by test and experience, even when they were applied to materials which appeared to approximate most closely to the ideal material which he was considering, namely, a granular material depending on friction, and devoid of cohesion.

Foundations on clay, however, appeared on the contrary to have a total stability less than the stability calculated from consideration of the safe pressure at the edge, and it would appear to be necessary in obtaining the total pressure on a base to multiply the safe pressure at the edge by a factor which might be of the order of two-thirds, in addition, of course, to any factor of safety which it might be prudent to require. Added to this there was, however, another consideration when we came to the strength of a base itself. Most bases were designed as cantilevers from the centre, and it would be seen that with the sand foundation the centre of gravity of the load came nearer to the centre line than it did with uniform distribution, and the total bending moment was much reduced in consequence. The converse was true in the case of clay.

While on the subject of foundations, the author offered a word of warning in connection with piled foundations, which, he said,

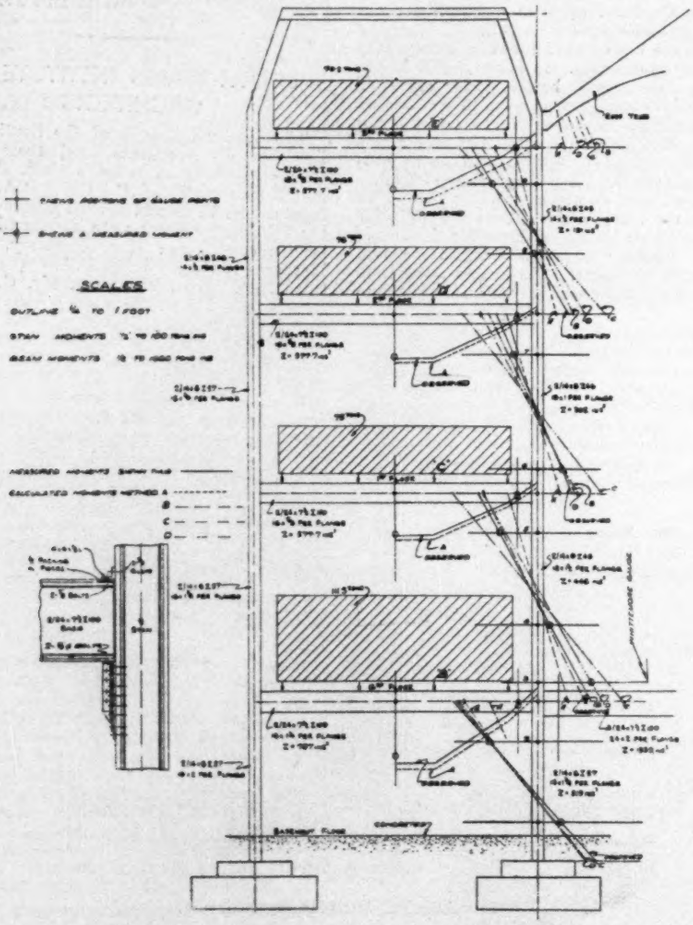


FIG. 1.

often contained traps which were not always obvious. There seemed to be a popular belief that, provided a pile gave the set required in accordance with a pile-driving formula corresponding to a particular carrying capacity, or if an individual pile would safely carry a certain test load, a group of similar piles might be assumed to carry the total load with safety *pro rata* to the number of piles. There were many cases where this was entirely untrue and where very serious accidents to buildings had occurred by a neglect to recognise these conditions.

Fig. 2 represented a particular set of underground conditions in which piles were driven through a thick layer of peat into a bed of underlying clay. When pile No. 1 was driven it would encounter resistance which was represented by the sum of the friction on the lengths AB, BC, CD, and the end resistance of the point, and these four items went to make up this total resistance both when this pile was being driven and if it was subsequently loaded with the test load, and the test load in this case might be entirely satisfactory.

The friction on the length AB transferred a certain proportion of load to the upper layer of clay which spread it over a large area such as EF of the peat layer, where it might produce a pressure on the peat so low as to be negligible, and no settlement might in consequence occur. If, however, a group of similar piles was driven close together, the areas corresponding to EF of the various piles became superimposed, and a much greater pressure might be exerted on the peat, which it might be unable to resist, and the peat then squeezed up and drove the contained water away laterally. The peat then became exposed to the pressure represented by the weight of the upper layer of clay plus the proportion of the skin friction on the piles represented by AB, and under these conditions the peat might squeeze up very appreciably.

The layer of 12 ft. peat, in one example, was squeezed to the extent of two or three feet. When this happened the only portion of the resistance of the pile which remained to resist settlement was the skin friction on the portion CD, plus the resistance of the point, and this resistance had to balance the load on the pile, the weight of the pile, and the weight of the upper layer of clay which, adhering to the length AB, got carried on the pile, no longer receiving adequate support from the peat below it. In this way it sometimes happened that a group of many piles might only carry a small proportion of the load per pile which any individual pile tested singly would appear to justify, whether this test took the form of a pile-driving formula or whether it was obtained by an actual loading test on the pile.

The author had come across many cases where buildings erected under somewhat similar conditions had settled grievously, where the architect or engineer considered that he had taken all reasonable precautions in estimating the load per pile and in providing piles which, according to a well-recognised formula, should be competent to carry such a load. It would be recognised that this was quite apart from any question of the soundness or otherwise of the particular pile-driving formula employed, of which it was only necessary to say that a great many gave very inaccurate results, as was obvious from the fact that a dozen or so of different formulæ might give results varying as much as several hundreds per cent. among themselves.

Fig. 3 showed a particularly interesting example of a pile-driving problem where it was required to provide foundations for a very heavy silo building weighing approximately three tons to the square foot. The test piles of timber drove through to a depth of 65 ft. on to a layer of hard red marl, where they suddenly reached refusal. The concrete piles were designed to be driven with a 4-ton monkey dropping 4 ft., and to give a set of 20 blows to the inch, the timber test piles having been driven through to the red marl with only a 2-ton monkey dropping 4 ft. and with a set never exceeding ten blows to the inch, which was reached at a hard crust about 55 ft. down, and under which, it was clear from the pile-driving records, there was a layer of soft running sand, as the sets dropped down to as little as thirty or forty blows to the foot after the hard crust was penetrated.

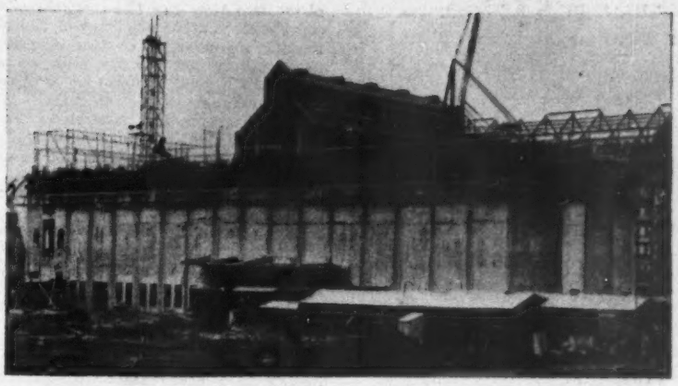


Fig. 4. Height 40 ft., February 6.

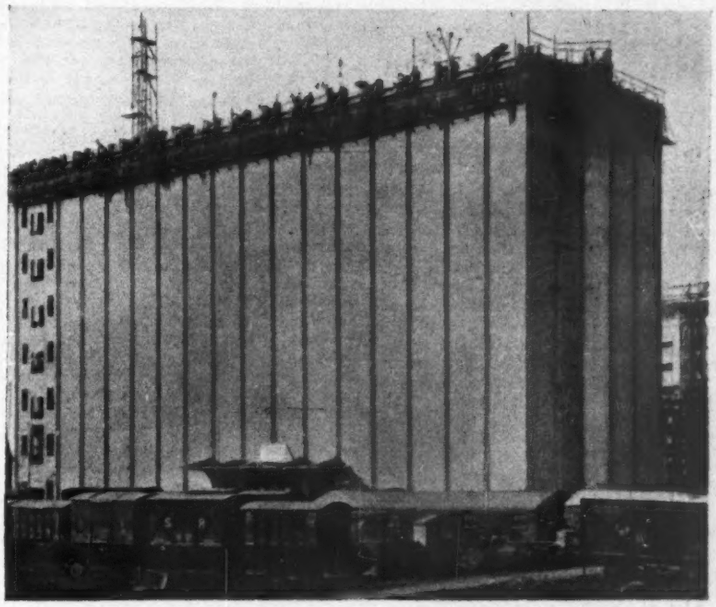


Fig. 5. Height 120 ft., February 22.

Silo Building, Cardiff, showing use of continuously moving forms.

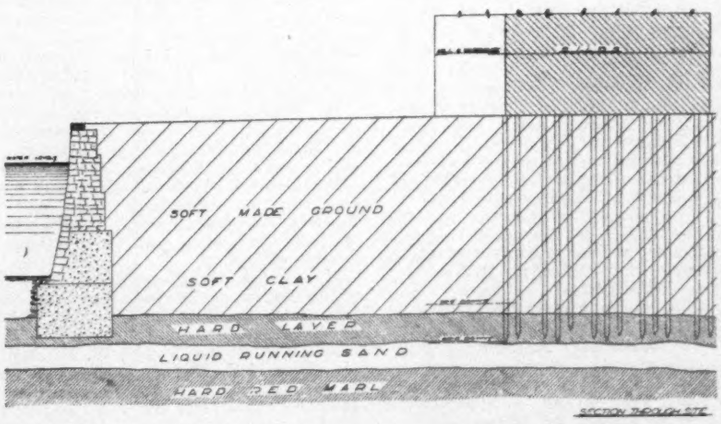


Fig. 3.

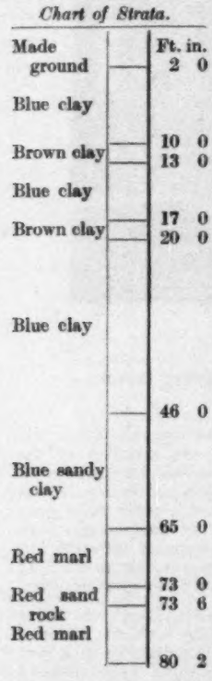
TRIAL PILE RECORD.

Ft. below ground.	Blows per foot.	Ft. below ground.	Blows per foot
5	21	38	30
6	4	39	29
7	1	30	28
8	1	41	25
9	3	42	21
10	2	43	18
11	3	44	20
12	3	45	20
13	3	46	19
14	4	47	22B
15	4	48	26
16	4	49	25
17	4	50	47
18	4	51	76
19	5	52	75
20	5	53	75B
21	6	54	68
22	5	55	60
23	5	56	77
24	5	57	122B
25	6	58	113
26	7	59	73
27	6	60	44B
28	6	61	36
29	6	62	34
30	7	63	30
31	7	64	31
32	8	65	34
33	7	66	
34	8		100 for 10 in.
35	7A		80 for 1½ in.
36	42		
37	30		

A=Spliced pile. B=Stopped for steam.

Experience showed that the concrete piles had the greatest difficulty in penetrating this crust and reaching the specified set in the hard layer, and the problem then arose as to whether this set could, under these circumstances, be accepted. An investigation of the matter revealed the following:—The weight of earth overlying the running sand represented a hydrostatic pressure of about 3 tons to the square foot, and had the piles been stopped in the hard crust above it they would have transferred on to it another three tons to the square foot, representing the weight of the silos, thus giving a pressure of about six tons to the square foot on the running sand.

BORE HOLE No. 1.
Chart of Strata.



This would be balanced on the water side of the dock by a certain weight of water and soil underneath it, which together produced a pressure of only about two tons to the square foot, so that there would be an unbalanced hydrostatic pressure of about four tons to the square foot, tending to produce lateral movement of the running sand from under the silos under the dock wall and up into the dock, which, in the opinion of the author, would involve risk of the dock wall sliding and the silos subsiding.

It became necessary to insist on the penetration of the hard crust, notwithstanding the fact that specification requirements had been met by obtaining the requisite set in the hard crust, as an unsatisfactory foundation would have resulted. The fact that the timber piles penetrated with a blow of only 8 foot tons whereas the concrete piles failed to penetrate with a blow of 16 foot tons was explained by the fact that the timber piles weighed only about two tons and the concrete piles about eight tons, and the efficiency of the blow was therefore greater. In this case it became necessary to increase the blow on the concrete piles beyond 16 foot tons to obtain penetration through to the red marl. This was another example of a case where the driving of a pile to a set normally considered entirely satisfactory would have resulted in a dangerous condition.

As a result of experience of many cases somewhat analogous to the two which had been described, the author would submit the following propositions.

(1) The mere fact of a pile driving to a satisfactory set was no indication that a group of similar piles would safely carry any particular load, the accuracy of a pile-driving formula employed notwithstanding.

(2) The fact of a single test pile being loaded to a given load without subsidence was not in itself a guarantee that a group of many piles would carry this load per pile.

(3) Examination of the soil by bore holes would not alone give the information required any more than an examination of the soil with test piles, but the two taken in conjunction with each other often gave valuable information. Test piles should, as far as possible, be driven to a greater depth than it was proposed to drive the permanent piles.

(4) All the circumstances of the strata needed to be taken into account in deciding what was a safe load per pile, and no pile-driving formula was in itself sufficient.

On the subject of economy in building a word should, he thought, be said on the relative economy of constructional steelwork and reinforced concrete. No one would suggest that there were not many cases where a steel frame building was the correct solution to a structural problem. Nevertheless, there was, he thought, no doubt that the advantages of reinforced concrete had been too long neglected in this country in cases where economy was an important consideration.

Dealing first with the question of economy, the author recently prepared comparative designs for a steel and concrete column, each to carry 1,000 tons on a 14 ft. story height, with concentric loading, the column being based in both cases on L.C.C. regulations. The steel stanchion cased came out to £5.79 per foot run, and the reinforced concrete column to £3.39 per foot run, showing that the steel column cased was 1.71 times the cost of the concrete column. The rates which were used in the calculations were submitted to a competent quantity surveyor, who approved them as being properly comparable.

Approximately the same relation as regards costs existed in regard to beams, as the quantity of concrete and shutterings was approximately common to both, but the amount of steel in the reinforced concrete beam was approximately one-third that required for a steel joist, partly because, owing to continuity, it had to be designed for a smaller moment, and partly because the concrete took the compression and shearing stresses, and steel had only to be provided for the tension stresses, the rods being bent up towards the end to look after the shear in conjunction with the concrete of the beam.

The author had taken out the costs of the constructional work in a good many large buildings and compared the cost of a steel frame building cased with that of a reinforced concrete frame building, and in all cases of buildings carrying several stories it was found that the cost in concrete was considerably less than that in steel, cased to meet the requirements of building authorities.

Apart from the use of concrete for the framework of buildings, it was also used in a more interesting manner in structures like the Horticultural Hall (Messrs. Easton and Robertson, FF.R.I.B.A., architects), and, more recently, in the new market buildings at Nairobi (Messrs. C. Rand Overy, F.R.I.B.A., and S. L. Blackburne, A.R.I.B.A., architects).

Coming to the speed of reinforced concrete construction, Figs 4 and 5 illustrated a building being erected for Messrs. Spillers, Ltd., of Cardiff. The first figure showed the building at a height of 40 ft. above the ground on February 6, and the second showed it again on February 22, when it was 120 ft. above the ground—i.e., it had risen approximately 80 ft. in about a fortnight, not working week-ends, and two week-ends came into this period. The building in question was a silo building as to the greater portion of it, with a receiving house at one end which had floors and windows in the ordinary way, and this portion went up without any difficulty at the same speed as the rest. The building was constructed on a system of continuously moving forms, whereby the workmen merely had to pour concrete and place steel to keep pace with the movement of the shuttering. Reinforced concrete walls constructed in the old-fashioned method were built by having shuttering on both sides erected by carpenters, behind whom followed the steel-placing gang, who in turn were followed by the concretors. The concrete was left to set for a day or two, and was now normally placed as to 3 ft. 6 in. height of concrete at a time. After a day or two's setting the shutters were dismantled, cleaned, oiled, and re-erected by carpenters, and the same process repeated. The net result was that it took about four days to build a height of about 4 ft., or, roughly, 1 foot per day.

With the method of construction employed at Cardiff the building rose at a rate of about 7 ft. a day, and even greater progress could have been made under summer conditions, but this work was done in the depth of winter. It is perhaps of interest that the Cardiff building cost 5¼d. per foot cube complete, In the lecturer's opinion there was no reason why this system of construction should not be applied to such buildings as office blocks or flats.

The lecturer was of opinion that if architects and engineers were to combine in the development of this kind of construction, such economies might be achieved in building as would open up a new field justifiable financially in spite of the difficult conditions which presented themselves to-day.

Discussion.

Sir Herbert Baker, proposing a vote of thanks to the lecturer, said the architect sometimes could not get on without the engineer, but the engineer could not get on without the architect. The time might come when scholarship would no longer be required and functionalism would hold the field, but until then collaboration would be essential. The speaker concluded with a tribute to the work of the lecturer in connection with the reconstruction of the Bank of England.

Mr. Walter Allen having seconded the motion, general discussion followed.

Mr. J. S. Wilson, having comented upon some of the lecturer's experiments, suggested that instead of criticising the construction of old buildings we should test them to find the intrinsic strength that had enabled them to stand for so many years.

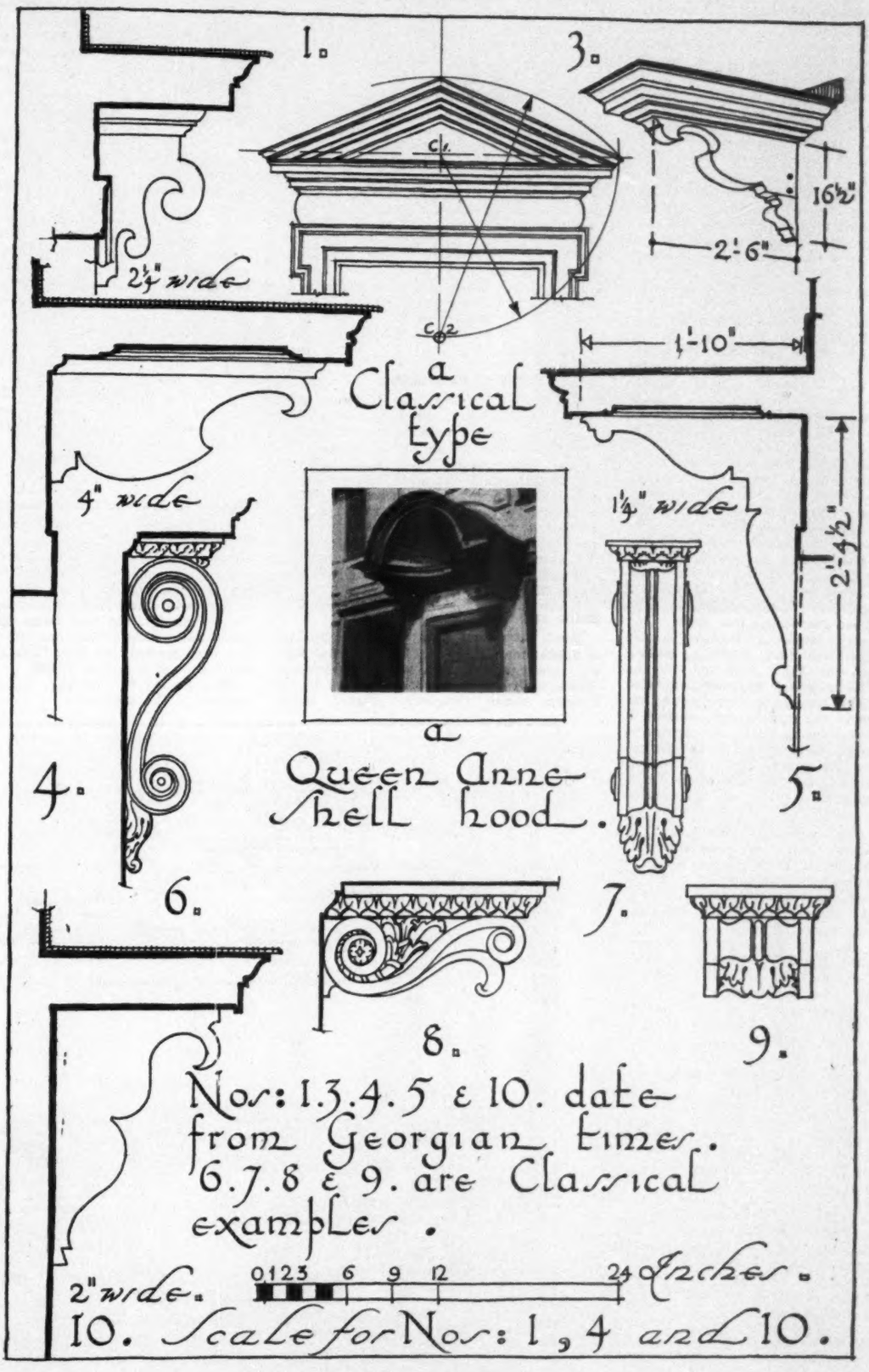
Mr. E. C. P. Monson mentioned the case of an old building which he was now pulling down, in which 14 in. walls on one course of footings had stood safely for ninety-nine years, and suggested that the requirements of the by-laws were excessive. The continuously moving shuttering for reinforced concrete which the lecturer had described was a wonderful invention. To build 7 ft. in twenty-four hours was an extraordinary performance.

Mr. William Muirhead referred to experiments similar to Dr. Faber's, carried out by Sir Benjamin Baker thirty years ago, and said it was a pity they were not on record.

Mr. Ewart S. Andrews said it was a mystery how some buildings stood up. An American had described it as "a combination of force of habit and the guidance of Providence."

Mr. Joseph Armitage asked how these immensely strong reinforced concrete buildings could be demolished after they had outlived their usefulness.

Mr. Alan Munby, Mr. D. W. Mitchell and Mr. Bernard J. Dicksee having contributed to the discussion, Dr. Faber replied to many questions raised, and said that judging from his experience at the Bank of England reinforced concrete could be demolished without excessive difficulty.



English Detail—11. Doorways.

ILLUSTRATIONS

PLATES.

Prudential Assurance Company's Premises.

A considerable extension of these premises has just been completed. It will be remembered that the original building was designed by the late Alfred Waterhouse, R.A. In the façades of the present extension Messrs. Joseph, the architects, have repeated the character of the original design and used similar materials. The new wing, together with the old portion, forms a symmetrical block.

The extensiveness of the scheme may be judged from the plans. Beneath the courtyard provision has been made for a cafeteria, where some 2,000 meals can be provided daily for members of the staff. A well-proportioned entrance hall, modern in character, is provided, embodying a Gothic spirit. Spacious departmental accommodation is also provided. One of the most interesting portions of the new building is the board room floor, every room having a distinct character, panelled in Empire timbers where possible. The panelling is simple in character, with low relief mouldings. The chairman's room is panelled in walnut, and the second chairman's room in mahogany, with Jarrah flooring, with a chimneypiece in Hopton Wood stone. The approach lobby to this suite of rooms is panelled in birch, and the deputy chairman's room in limed oak panelling. The directors' room is panelled in oak linen-fold panelling, removed from the old building. The conference room has an English oak dado. The acoustic properties are excellent, it being possible to hear a speaker at the end of the room clearly. The directors' luncheon room is also panelled in limed oak, with Portland and Hopton Wood stone chimney-piece. The officers' luncheon room has a teak dado.

Amongst other important features is the theatre on the sixth floor, providing seating accommodation for 700. Attached to the theatre are the necessary dressing-rooms and lavatories. The furnishing throughout has been designed in the modern style—simple in character, with pleasing lines. No aggressive colour schemes have been used in the decoration; a simple, harmonious and restful colour treatment prevails through the whole building. The strong room is of considerable interest.

Messrs. Joseph were the architects; Mr. A. J. Sprague, F.S.I., the quantity surveyor; and Messrs. S. H. White and Son the consulting engineers.

The general contractors were Messrs. Trollope and Colls, Ltd., and the following firms were associated with the work: Dorman, Long and Co., steelwork; Trollope and Colls, Ltd., concrete and reinforcements; Cement Marketing Co., Ltd., cement; Flettons, Ltd., London Brick Co., W. J. White and Co., Midhurst Brick Co., Edwards (Ruabon), Ltd., and Accrington Brick Co., bricks; H. C. Parker and Co., and Leeds Fireclay Co., glazed bricks; Carter and Co. (London), Ltd., Shaw's Glazed Brick Co., Ltd., and W. B. Simpson and Sons, tiling; Trollope and Colls, Ltd., stone; Sterling and Johnson and Roberts Adlard, slates and slating; Carter and Co. (London), Ltd., terrazzo; Fenning and Co., marble; Ragusa Asphalte Co., and Highways Construction Co., asphalt; J. A. King and Co., pavement lights; Kleine Co., floors; Dunlop Rubber Company, rubber flooring; Building and Insulating Materials Co., Ltd., partition blocks; Crittall Manufacturing Co., Ltd., and Henry Hope and Sons, casements; Compton Bros., glass; Trollope and Colls, Ltd., and Rippers, Ltd., joinery, doors and panelling; S. H. Wheeler, lighting; J. H. Nicholson, heating and ventilation; J. Bolding and Sons, sanitary ware; J. H. Nicholson, hot water supply; Crittall Manufacturing Co., metal partitions; J. Starkie Gardner and J. R. Pearson (Birmingham), Ltd., metalwork; F. H. Wheeler, electrical work; Trollope and Colls, Ltd., and Plastering, Ltd., fibrous plaster; Waygood Otis, Ltd., lifts; Bratt, Colbran, fires and fireplaces; Mather and Platt, shutters; Samuel Elliott and Sons (Reading), revolving doors; Mather and Platt, fire appliances; Trollope and Colls, Ltd., and Mayfair Spraying and Decorating Co., Ltd., paintwork; May Acoustics Co., acoustics; Benham and Sons, refrigerators; Nettlefold and Sons, Ltd., and J. H. Gibbons and Co., Ltd., ironmongery.

Sports Pavilion, Mitcham.

This building has been erected to complete the memorial to students of King's College, University of London, who lost their lives in the War. On the ground floor there are twelve dressing-rooms for men and five for women, with spacious bathing accommodation to each section, drying-room, heating chamber and stores. Two oak staircases give access to a tea-room on the first floor, some 80 ft. long, with a balcony overlooking the playing fields. Adjoining the tea-room are the service rooms, with caretaker's flat behind. The general contractors were Messrs. F. G. Minter, Ltd.

Messrs. F. W. Troup, FF.R.I.B.A., are the architects.

Sports Pavilion, New Malden.

Messrs. F. G. Minter, Ltd., the well-known building contractors, have their own athletic club, with a ground at New Malden, Surrey. The new pavilion building illustrated has, on the ground floor, three dressing-rooms, with washing and lavatory accommodation, and a refreshment room with bar and kitchen adjoining. By utilising the roof spaces to the full it was found possible to provide on the first floor for club and committee rooms and groundsman's quarters.

Messrs. F. W. Troup, FF.R.I.B.A., are the architects.

Shops and Flats, Palmers Green.

These shops and flats occupy a frontage of approximately 155 ft. The external walls are faced with Luton red multi-coloured bricks, with cast stonework, executed by the Victoria Stone Company. Mixed multi-coloured sand-faced tiles have been used for the roofs, and Crittall's sashes are fixed throughout. Messrs. Allen Fairhead were the contractors.

The work was carried out under the supervision of Mr. H. W. Couchman, A.R.I.B.A., of Messrs. H. Seymour Couchman and Sons, of Tottenham. The elevation to the ground-floor corner premises was designed by Mr. T. Young.

Worcester Housing Scheme.

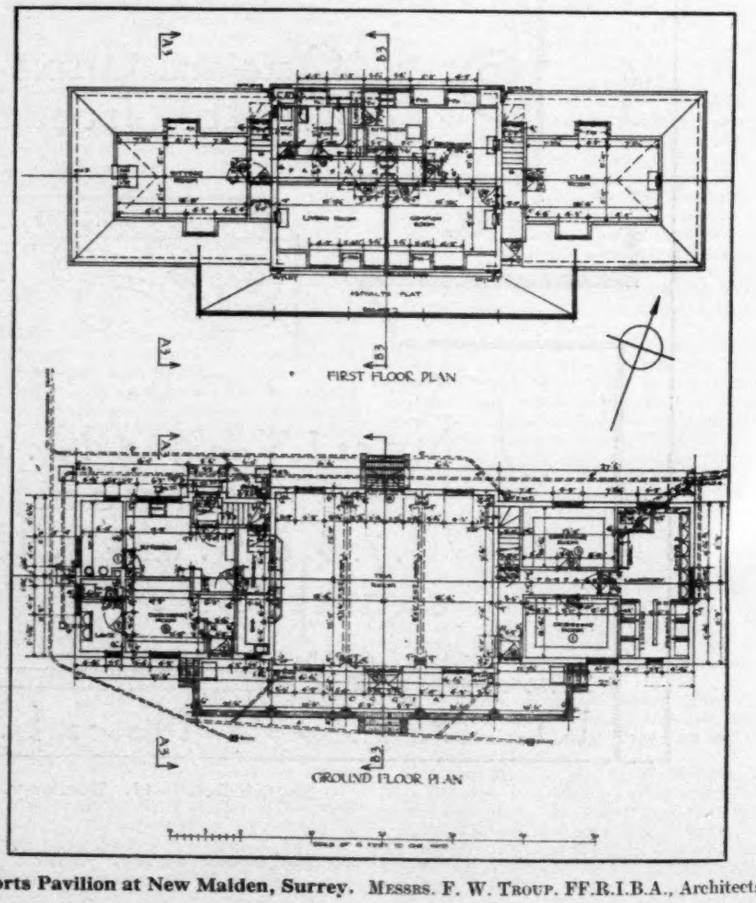
The City of Worcester, having already completed the erection of 1,435 houses, and having in course of erection a further 202 houses, is now proposing a scheme for 164 houses of a type called "three-bed-small." The houses are semi-detached, with a superficial area of 672 sq. ft. Some of the houses are built with roughcast elevations and tiled roofs, and the remainder have all-brick elevations and slated roofs. Tenders for these houses, of just over £272 each, include the wiring of houses for electric light and heating plugs, water and gas supplies, a high-class combination grate, and chain link and concrete post fencings. The contract for the houses is in the hands of Messrs. Housing, Ltd., of Blackheath, Birmingham, while Messrs. Andrew Blair, Lyall and Co., Ltd., have secured the contract for constructing roads and sewers.

Mr. William Ransom, M.Inst.C.E., is the City Engineer.

Church of England School, Langford.

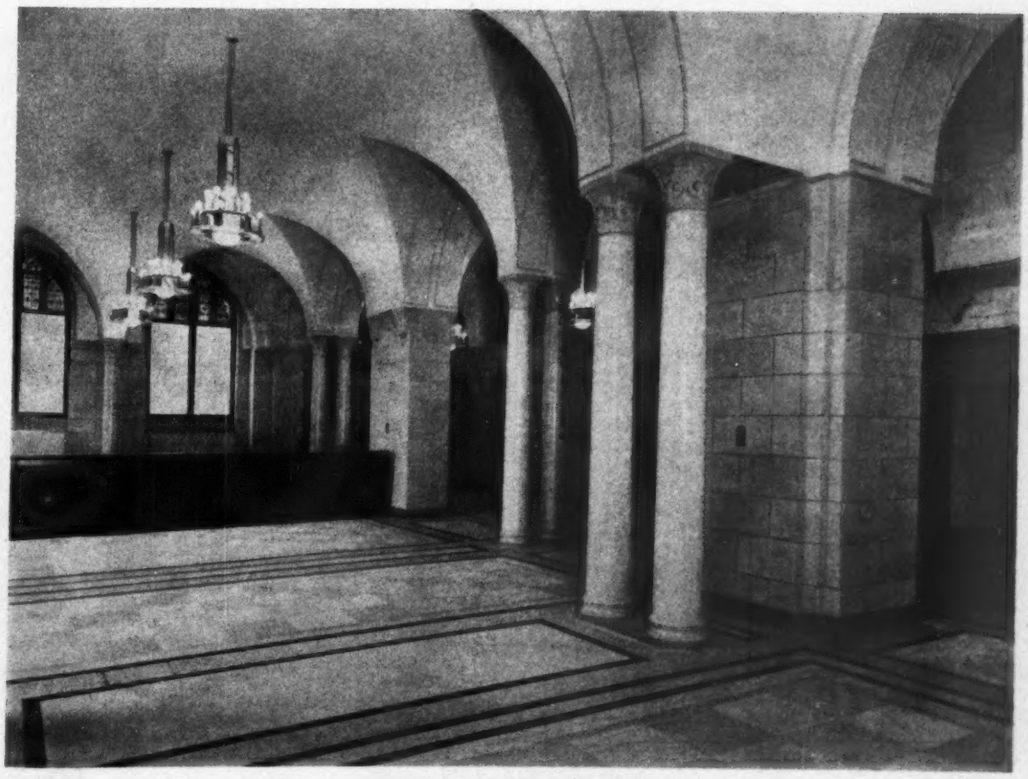
This Church of England school, recently completed at the village of Langford, in the Cotswold country, has been designed to harmonise with the old Cotswold buildings in the district, and is constructed with local stone walls, lined inside with lime bricks in lieu of plaster, the roof being covered with stone slates from a local quarry. The building was erected by direct labour by local craftsmen, at a cost of £3,500.

Mr. Harry W. Smith, A.R.I.B.A., of Oxford, is the architect.



Sports Pavilion at New Malden, Surrey. Messrs. F. W. Troup, FF.R.I.B.A., Architects.

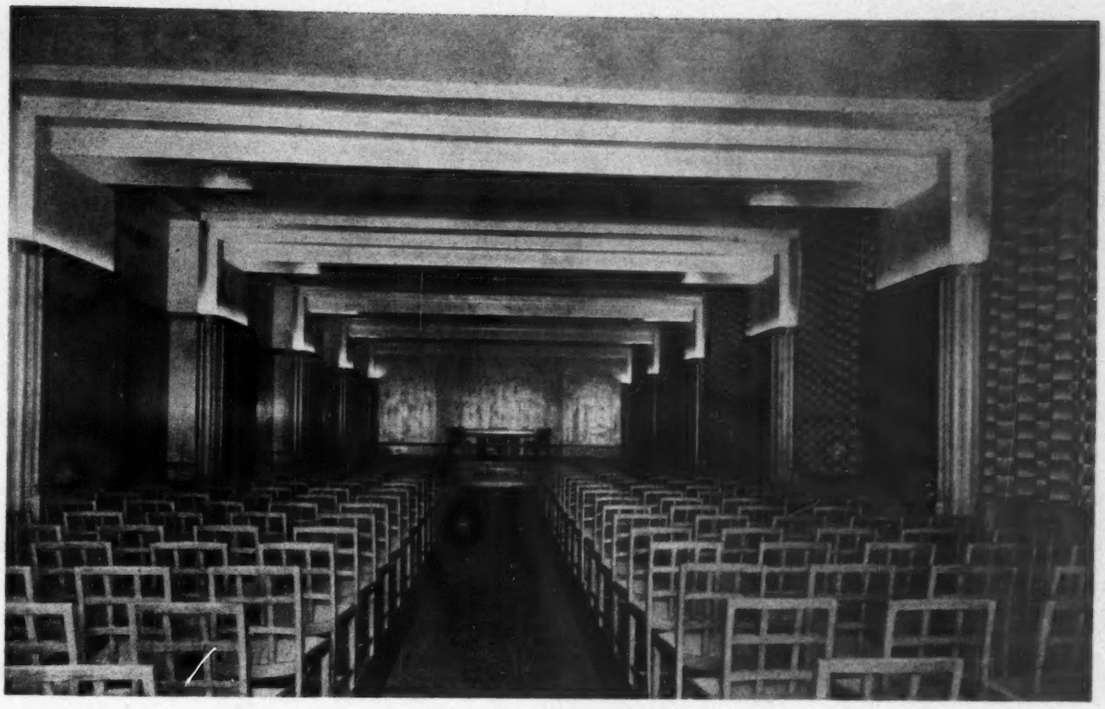
North Staircase.



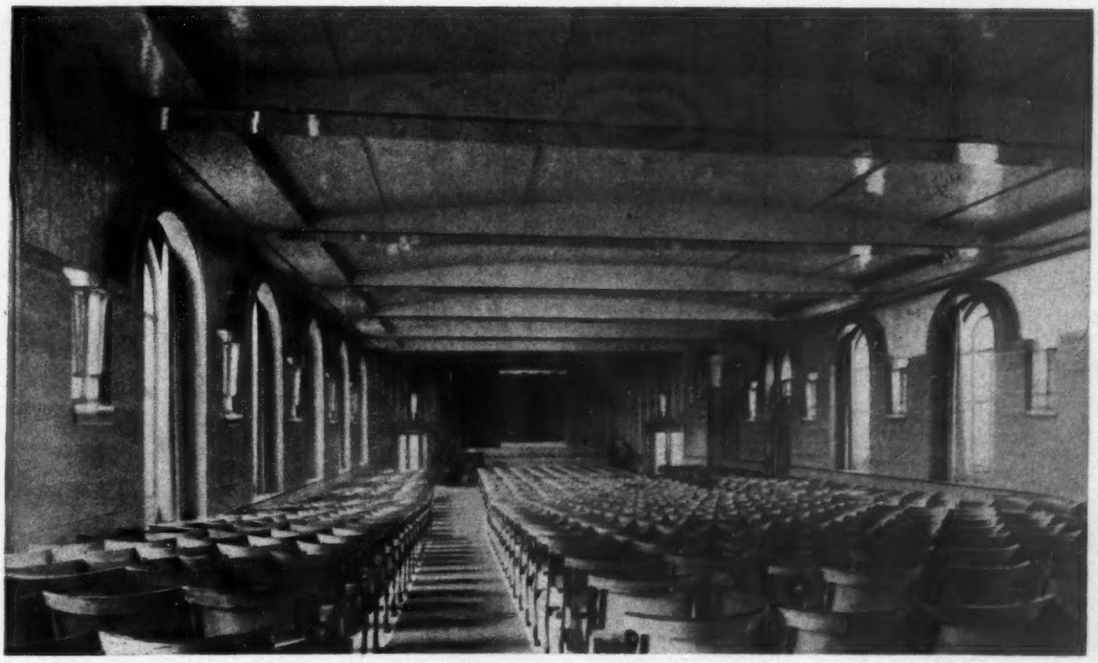
Entrance Hall, Looking West.

Extension of the Prudential Assurance Company's Chief Office, Holborn Bars, E.C.

Messrs. Joseph, Architects.



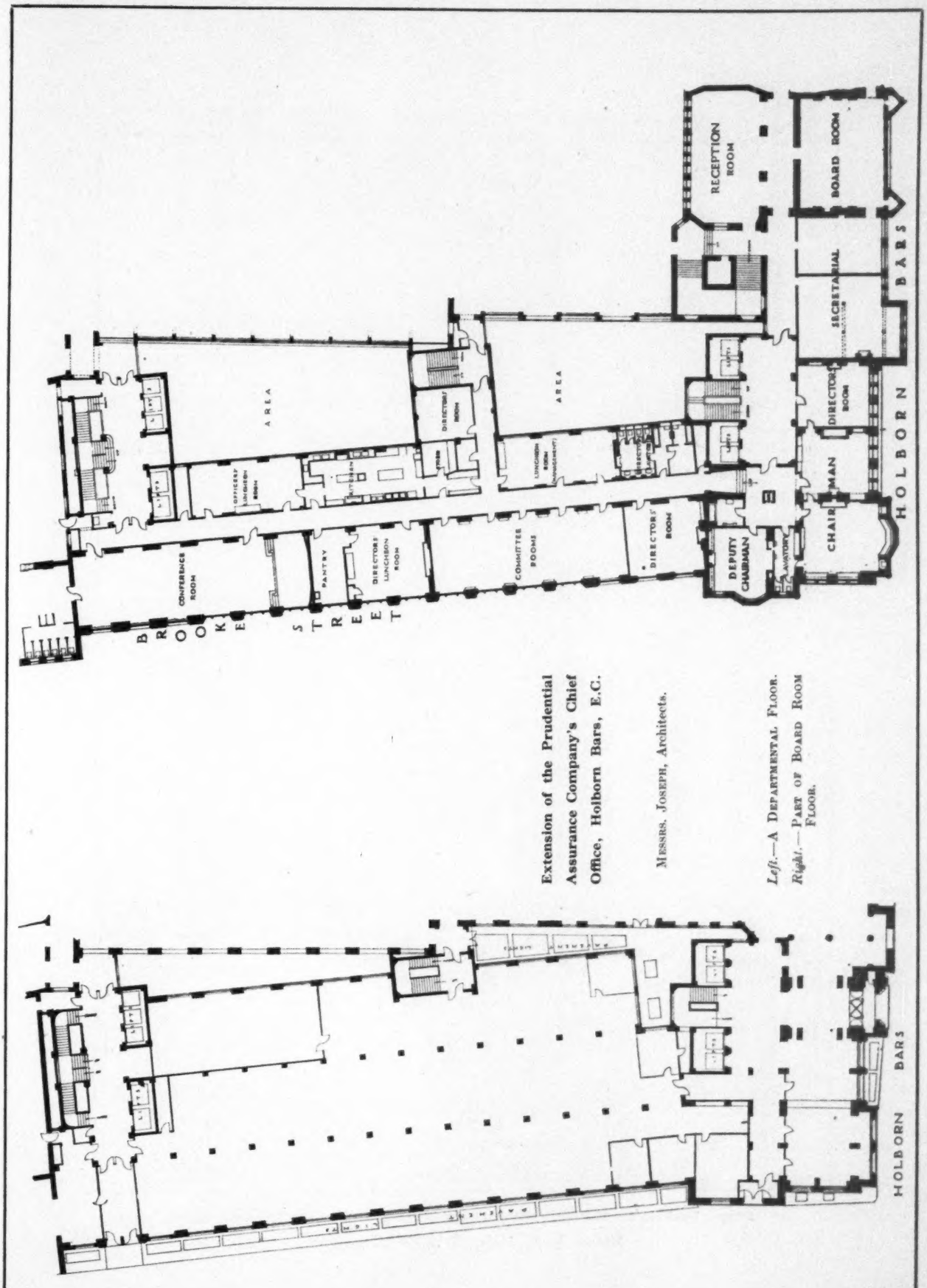
CONFERENCE HALL.



THEATRE.

Extension of the Prudential Assurance Company's Chief Office, Holborn Bars, E.C.

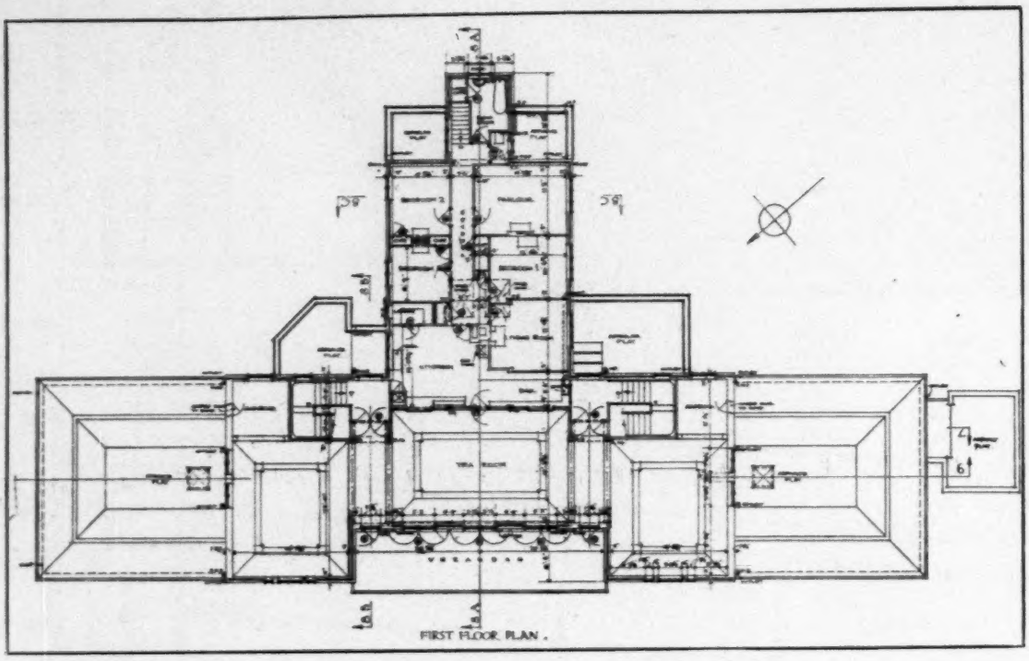
MESSRS. JOSEPH, Architects.

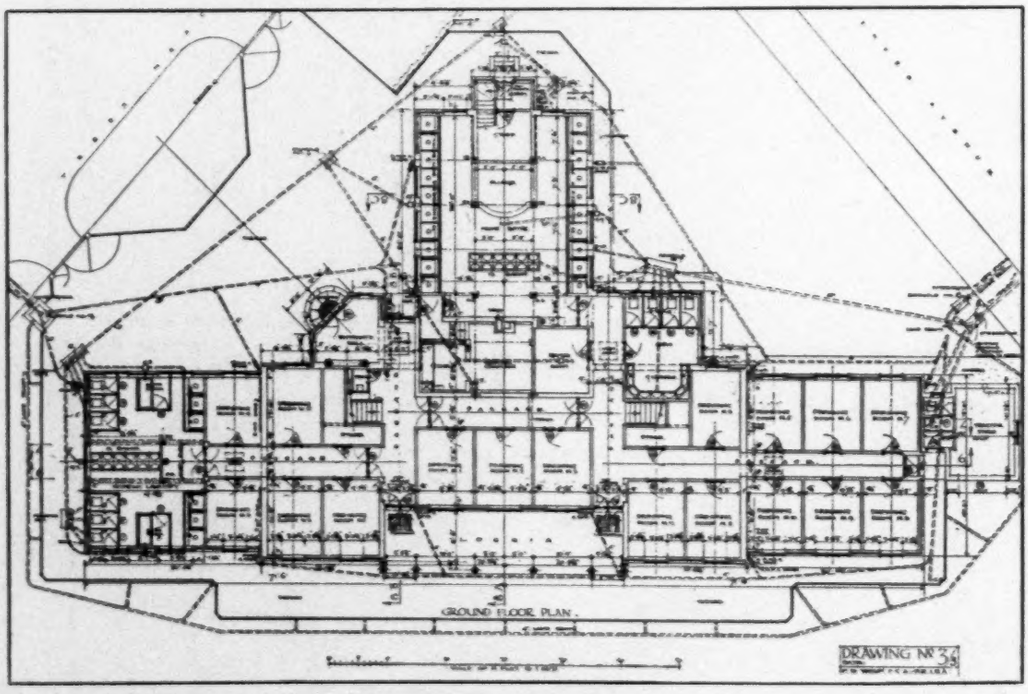


Extension of the Prudential Assurance Company's Chief Office, Holborn Bars, E.C.

MESSRS. JOSEPH, Architects.

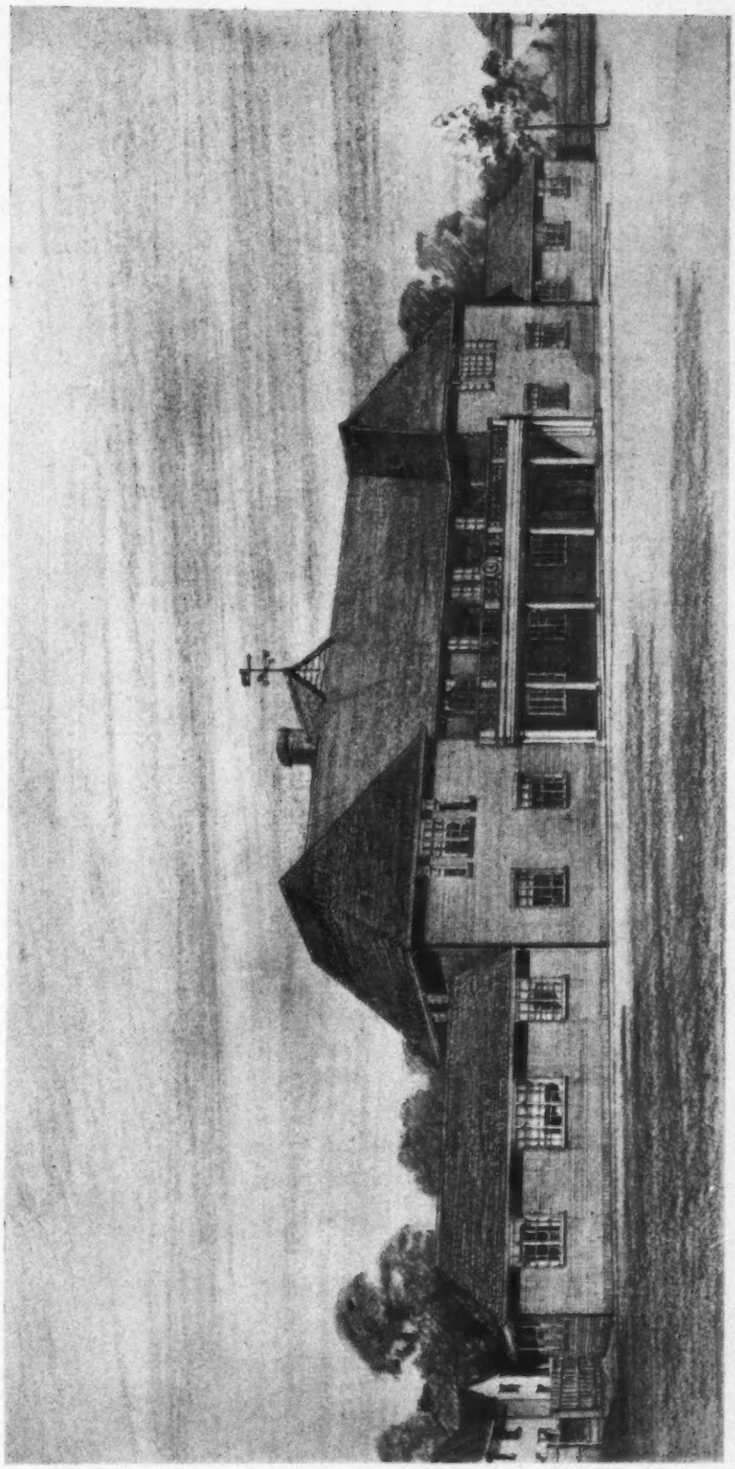
Left.—A DEPARTMENTAL FLOOR.
Right.—PART OF BOARD ROOM FLOOR.





Sports Pavilion for the University of London (King's College), Mitcham, Surrey.

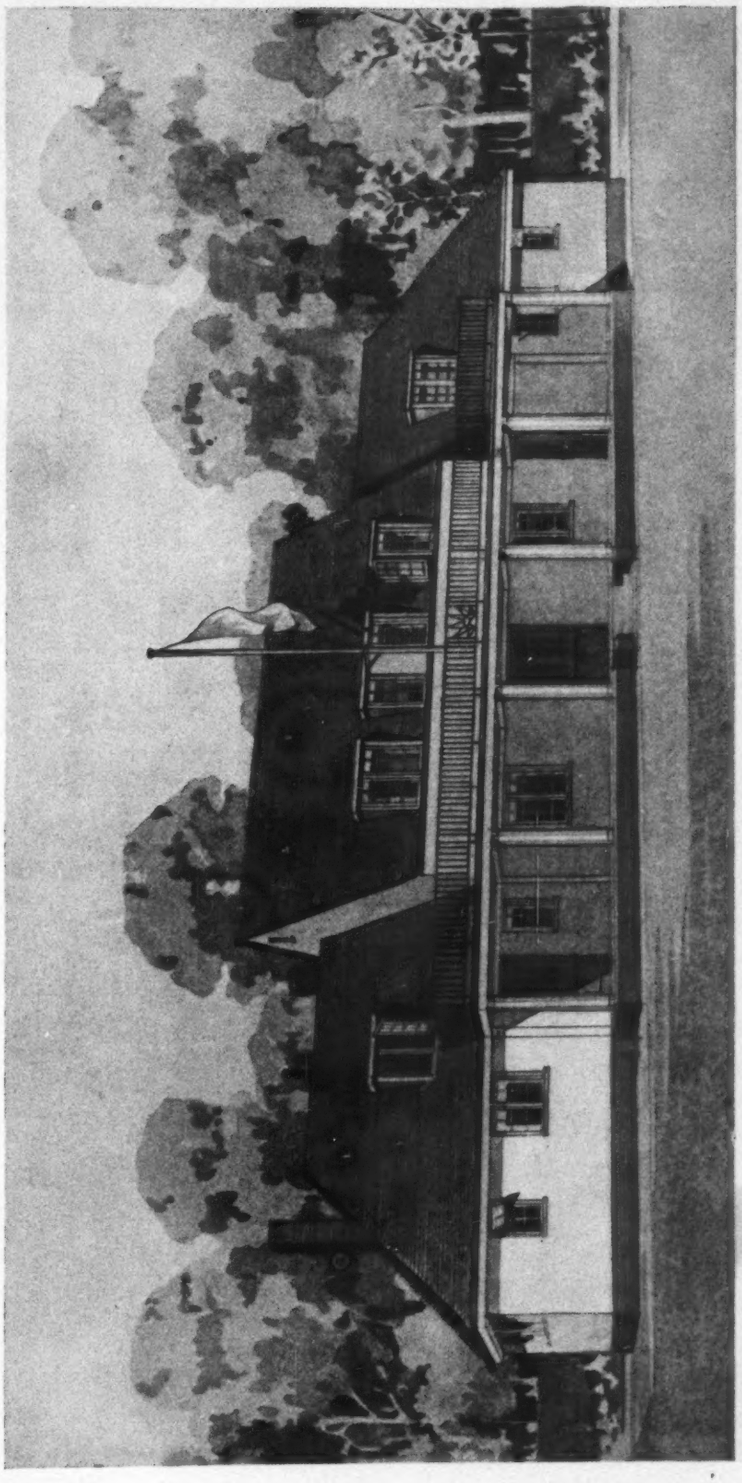
Messrs. F. W. Troup, FF.R.I.B.A., Architects.



R.A. Exhibition, 1932.

Sports Pavilion for the University of London (King's College), Mitcham, Surrey.

Messrs. F. W. Troup, FF.R.I.B.A., Architects.



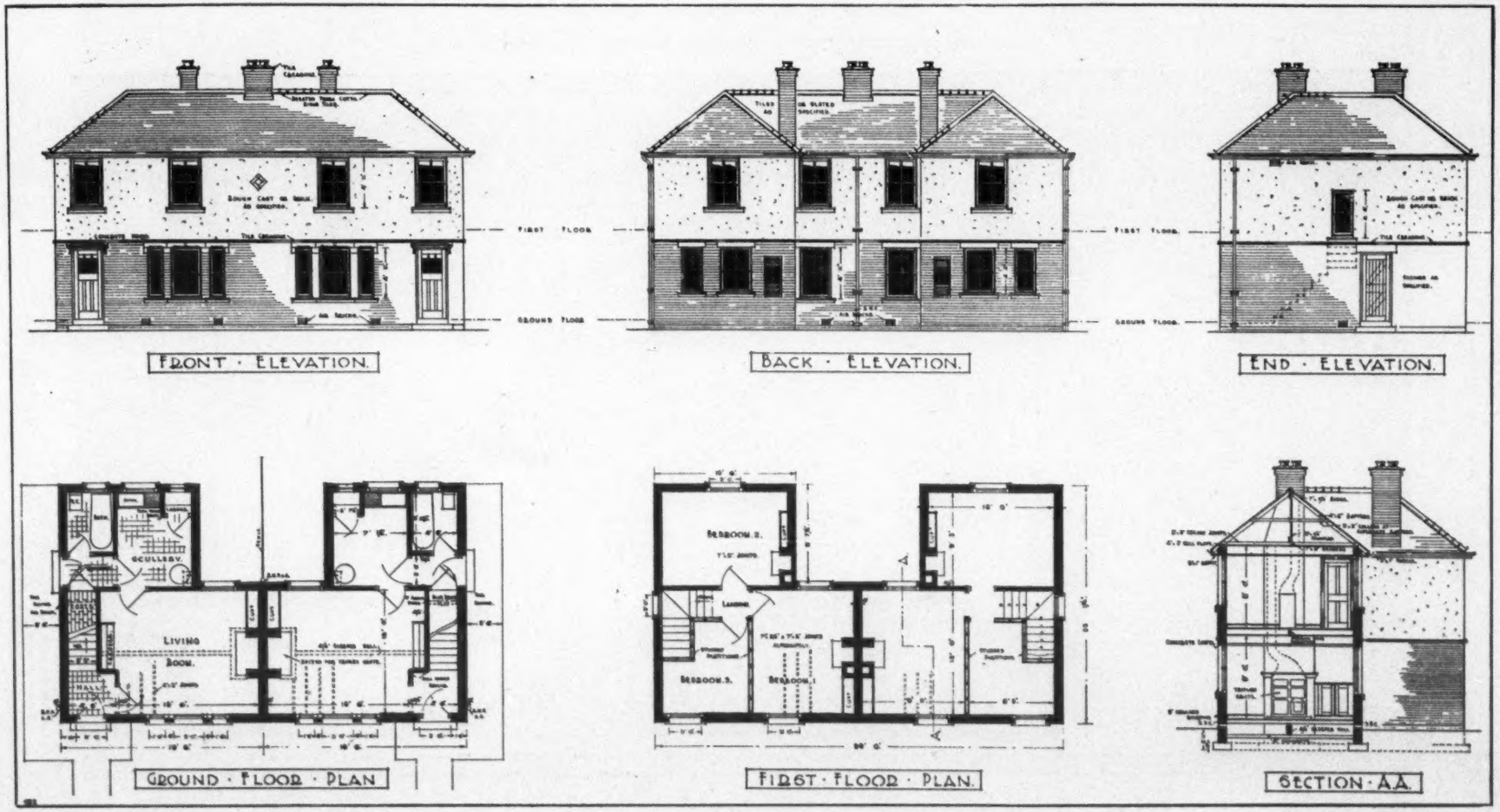
R.A. Exhibition, 1933.

Sports Pavilion at New Malden, Surrey.

Messrs. F. W. Troup, FF.R.I.B.A., Architects.

Shops and Flats, Palmers Green.

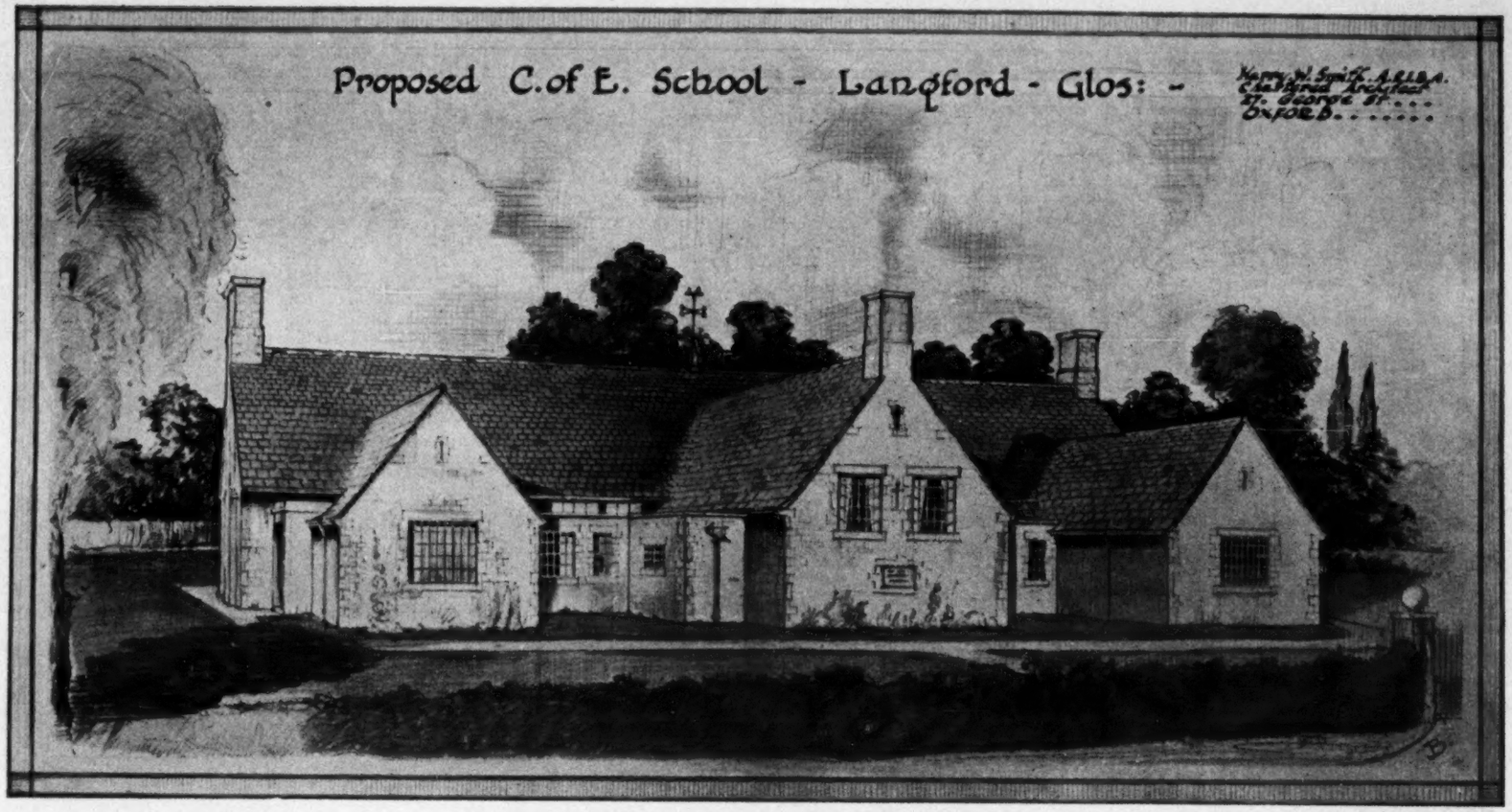
MR. H. W. COUCHMAN, A.R.I.B.A. (Messrs. H. Seymour Couchman and Sons), Architect. Bank Frontages designed by MR. T. YOUNG.



Proposed Small Houses, Worcester.

MR. WILLIAM RANSOM, M.Inst.C.E., City Engineer.

[The City of Worcester proposes to erect a scheme of 164 houses of " 3-bed-small " type, as shown in the above illustration. The houses are semi-detached and have a superficial area of 672 sq. ft. Some are to have rough-cast elevations and tiled roofs, and others all-brick elevations and slated roofs. Tenders for these houses of just over £272 each, include wiring for electric light and heating plugs, water and gas supplies, a combination grate, and chain link and concrete post fencings.]



Church of England School, Langford, Gloucestershire.

Mr. Harry W. Smith, A.R.I.B.A., Architect.

NEW PUBLIC WORKS

THE Special Committee for Public Relations of the Building Industries' National Council has now issued its second report on the questionnaire issued to local authorities. It will be remembered that authorities were asked to give details of works stopped by them as a result of the "economy" drive. Out of 1,976 forms sent out 918 have now been returned, of which 298 show curtailments totalling £16,837,775, an average per local authority of £18,343. From these figures it is calculated that the curtailment for the country as a whole is upwards of £36,000,000.

The damage done is thus clearly shown, and its character is emphasised by the fact that over 300,000 building trades' workers are at present out of work. Yet there is heartening evidence of a general change of opinion on the matter of curtailed public works. The success of the "spend more" campaigns which have been initiated in many towns; the noticeable increase in public works of all forms that are to be set going (many of them being schemes that "went into cold storage in the autumn of 1931"); the opinions of eminent business men and economists that money spent in this country on building actually saves the country money, besides creating permanent capital investment: such are some of the factors working towards recovery. From all sides associations and individuals are rallying to the cause. The National Union of Teachers "is perturbed because so many schools which were placed on the 'black list' in 1925 are still in use without renovation," and "has decided to establish close contact with the Building Industries' National Council with a view to arranging a campaign against economies in building programmes."

Sir Arthur Salter, in *The Times* of Tuesday, restates the case for a campaign for public works as a help towards the solution of our national problem. He says:—"Public work, it will be said, was tried and failed in 1928-31; it merely diverts money that would have been invested in private enterprises; and the indirect consequences which multiply the effects of the original action will be equal in both cases. The answer to these objections is, I believe, to be found in the special conditions of the present period. There are now large unutilised savings, which are neither being spent nor applied to real investment. . . . Even those, therefore, who think that public expenditure was wrongly expanded in 1928 and the following years, and rightly curtailed in 1931, may agree that a reversal of policy is now desirable. The Government have recently indicated sympathy with this view. If they change their policy this will not mean inconsistency, but an adaptation to new conditions.

No one knowing the building industry will fall into the mistake of thinking that we are "out of the wood." But we are, we believe firmly, on the move. Additional hard work within the industry and increasing publicity for its aims and for the important part it plays in the national life must be given. In this connection the Building Industries' National Council make a strong appeal for further subscriptions towards the propaganda fund. The work to which this fund is applied is urgent and vital, and all are asked to support that work and to obtain new subscribers.

We continue our list of new public works soon to go ahead.

Blackburn.

The C.B. propose to erect 48 houses on Longshaw No. 2 site, and builders are invited to apply for specifications, etc., not later than March 27.

Bridlington.

The T.C. has received sanction from the Ministry of Health to build 120 houses.

Carlisle.

The City Council has approved proposals of the E.C. for the erection of two new central schools on the Swifts site, to accommodate 640 boys and girls. The Council has also agreed to a scheme for the development of a site on the main Carlisle-Glasgow road as an aerodrome. Plans are to be taken out, it is understood, by Air Commodore D. Pitcher and Captain Ivor McLure, of the Civil Aviation Section of the London Chamber of Commerce.

Ely.

The County Council of the Isle of Ely Education Committee is inviting tenders, returnable by April 8, for the completion of the erection of an elementary school at Parson Drove.

Fulham.

The Council have appointed Messrs. Reekes and Mann, Chartered Surveyors, of 6 and 7, Buckingham-street, W.C.2, to act as quantity surveyors in connection with the Town Hall extension scheme.

Liverpool.

The H.M.O.W. is inviting tenders, returnable on April 11, for the erection of an employment exchange at Garston, Liverpool.

Sedgefield (Durham).

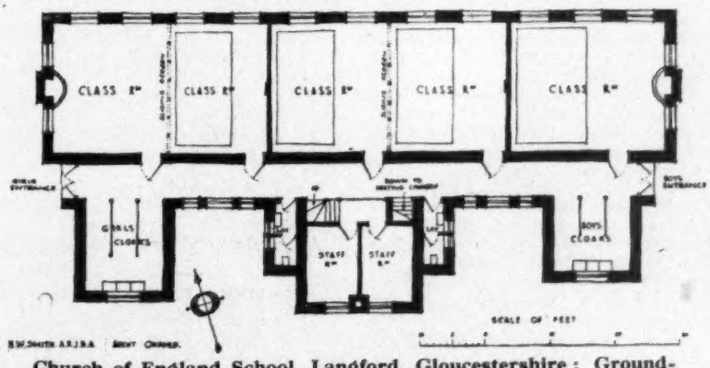
The R.D.C. has received the sanction of the M.H. to build a further 100 houses. Plans are by Mr. C. Stones, the Surveyor.

Teddington.

The U.D.C. is to extend the dressing blocks at the open-air swimming bath, Vicarage-road, to plans by Mr. H. S. Hunt, F.S.I., 38, Parliament-street, S.W.1. Tenders are invited, returnable by March 31.

Wandsworth.

The Borough Council, "taking into consideration the present state of the money market, have come to the conclusion that now is an opportune time to proceed with the scheme for a new civic centre, and, provided the work is carried out by stages, are satisfied that there need be no additional burden placed on the ratepayers."



Church of England School, Langford, Gloucestershire: Ground-floor Plan.

MR. HARRY W. SMITH, A.R.I.B.A., Architect.

(*See page* 500).

"THE BUILDER" DEBATE

LX.—THE HEIGHT OF ROOMS.

That in small houses seven feet of clear height is sufficient for bedrooms, and seven feet six inches in all ground-floor rooms except kitchens.

SIR,—It is not difficult to imagine "Negative's" reception of this proposition, for has he not behind him the authoritative opinion of those who helped to frame the Model By-Laws? And have not all of us at some time or another felt oppressed in a room with a low ceiling, though the clear height has been greater than that now proposed? But, on the other hand, have not many of us dined comfortably in a country inn, or slept contentedly in a farm house bedroom, where the rooms were of fair size, yet of no greater height than seven feet? Thus we must rule out of this debate personal preferences, and limit ourselves to considerations of comfort and health, but with some regard for beauty, economy, and convenience.

It is beyond dispute that a room having a low ceiling can be beautiful if decorated and furnished with taste and discretion; and many an architect has "fudged" the elevation of a cottage because of his dislike for the height imposed on him by the by-laws. So much for beauty. And let us change the conjunction "economy and convenience," and write of "economy with convenience." When a cottage or small house is to be planned, it is not so much the ground-floor that gives trouble for want of space, within the limits of cost, as the bedrooms. There the addition of one foot in frontage or in depth would often give the needed relief, and if it can be obtained without an increase in total cost, perhaps even with a lowering of cost in some cases, why not take it? The whole question really turns on considerations of health and comfort; if these are not endangered, I submit that my case is made out, for though a contrary opinion may be properly held, it will be on the grounds of personal predilection.

If the rooms are healthy and comfortable at some greater height, practically the only thing that can make them unhealthy at the heights proposed is lack of ventilation. Light they will have, and warmth in at least equal measure. Ventilation is not dependent on increased height, for excessive height may be an enemy to good ventilation. The air we expel being warm, ascends, carrying with it certain harmful gases. If these gases are not carried away they cool, and then, being heavier than air, descend to be re-breathed. Health is dependent on good ventilation for a good supply of reasonably pure air, offered in sufficient volume, and exchanged frequently. A decrease in the height of small rooms is not incompatible with the attainment of good ventilation.

At the time that the by-laws dealing with the heights of rooms were framed, the main object of those who dealt with the matter was to provide healthier conditions in working-class houses. Under these new by-laws it was still possible to build long rows of houses on streets of no great width. The stipulated amount of air space at the back could be obtained by providing a very small enclosed yard, and from thirty-five to forty of such houses could be built on an acre of land. Practically all means of producing artificial light in these houses consumed air. Much of the air admitted to the houses was dust-laden, tarred macadam not yet having come into general use.

The new planning on comparatively open sites and the other changes that have come about have much simplified the problem of ventilation; and with a much purer supply of air, a lesser consumption by reason of improved artificial lighting methods, and a better general knowledge of the subject, there is, it seems to me, no reason at all why a low ceiling should not be acceptable, if by that means we can obtain a little more floor space.

POSITIVE.

THE ARCHITECTURAL ASSOCIATION

ARCHITECTURE AND ENGINEERING

On Monday evening, in place of the ordinary meeting of the Architectural Association, a joint meeting was held at 36, Bedford-square, of the Architectural Association and the Junior Institution of Engineers, to discuss what the relationship should be between the two professions. Mr. H. S. Goodhart-Rendel, F.R.I.B.A., put the architect's point of view; Mr. C. O. Mourant, M.I.Struct.E., put that of the engineer. Mr. A. B. Knapp-Fisher (President) was in the chair. The announcement was made of the Council's proposed House List for 1933-34.

The Architect's Point of View.

Mr. Goodhart-Rendel said that modern architects and engineers were artists, but each in a different way. They were also business men, and this very much in the same way. The architect's peculiar art was fine art. The engineer's, useful art. Architects and engineers alike were interested in getting things put up. The name "architect" might signify either the man who made the design for a building or the man who saw to that design being carried out. These two functions might be performed by one person, and sometimes were. This applied to architecture: how far the two functions were as yet separated in engineering it was for Mr. Mourant to say.

Putting the two callings together, we saw that four things were required of architect plus engineer: the making of architectural designs, the making of engineering designs, the supply of works of architecture and the supply of works of engineering. At the time of the Renaissance men existed in France and Italy who could undertake all four functions, but we had none such to-day. To whom, then, should we allot the complementary functions of design and supply in the two arts? The answer to this question was that we had no rule or system. If we took the lowest type of architect, he got his designing and supervising done for him: he handed over his engineering to some manufacturer and, perhaps, a consulting engineer, and confined his own activities to what was called "arranging finance." Such a man was a supplier pure and simple, and often not a very good judge of the things he supplied.

If we took, on the other hand, what some people thought to be the highest type of architect, the man exclusively skilled in design, he also got his supervising and his engineering done for him, and was apt to "let his employers in" for paying a great many extra commissions to experts in subjects that might reasonably be expected to lie within an architect's capacity. He was a designer pure and simple, and might be either a good or bad organiser of his practical subalterns. As to engineering, there design and supervision would seldom be as easily separable as they were in architecture—the art was too practical for that; but the designer pure and simple existed, very often limiting his functions to those of a consultant.

The four necessary services enumerated could seldom be satisfactorily performed by the same man. Two of them, the design and supply of works of architecture, were supposed to be performed by the architect, and the two others, the design and supply of works of engineering, were supposed to be performed by the engineer. It was assumed there was an essential difference between designing architecture and designing engineering, but this he did not believe. On the other hand, in both professions the essential difference between the services of design and supply was ignored.

By "architecture," the lecturer explained that he meant building whose form resulted in some degree from æsthetic choice, while by civil engineering he meant building whose form was solely regulated by utility. But as things were the engineer might be faced with a problem involving æsthetic choice and the architect with a problem involving none: in short, the engineer might often design architecture and the architect engineering.

The designing of engineering and the designing of architecture were so nearly the same process that the man who was good at the one would generally be good at the other if he applied the methods habitual to him in his own art to the art he adopted as its complement; but the great variety of modern art, and the speed with which things must be designed, had forced specialisation upon us. It seemed, therefore, more likely that the combination advocated would be more practicable by means of collaboration between two men than by one man doubling the parts. The ideal combination should differ from the association of architect with engineer which occurred most often to-day, for nothing could be more vicious than the practice so popular with public authorities of sending engineers' designs to Burlington House to be trimmed.

The supply in either art was a nearly identical process. The designing process in either art, though not so nearly identical, was not disparate enough in the two to be incapable of normal unification. If, therefore, only two men were available for the four services it would be much more reasonable to make of one the designer, and of the other the supplier, than to make of both, as at present, half-in-half men, whose difference of profession emphasised a cleavage between their arts that it would be desirable to minimise.

Whether the rôles be doubled, trebled or further multiplied, the principle of classification should be the same. Large firms of architects and of engineers were common, and would probably become commoner. Large firms acting both as architects and engineers should become not only commoner, but in course of time universal. In the designing department of the work of such firms, the difference between the architect and the engineer should be forgotten, as far as it could be, in an atmosphere of close and continuous collaboration, and only in such an atmosphere was there any hope of the real restoration of either architecture or engineering to the esteem and respect that at the moment seemed jeopardised.

The Engineer's Point of View.

Mr. Mourant, who then spoke, devoted the first part of his address to analysing the L.C.C. Building Act, 1930, and particularly the Code of Practice, as published in February, 1932. The rules and regulations in this Code, he said, had been drawn up by structural experts, and would be found quite reasonable. By a perusal of them architects would realise that structural engineering called for specialised knowledge of the materials employed, an expert knowledge of the scientific methods and data employed in evolving the various formulæ, and a certain kind of mathematical mind to design important structural work properly.

It was impossible for any one individual to be a first-class artist and designer, an excellent sculptor, an expert planner, a technical expert in brickwork, masonry, carpentry and plumbing, with a specialised knowledge of all the materials employed in those trades, a sanitary, heating and ventilation expert, and a first-class structural engineer and mathematician. In view of the many different specialities now used in modern building construction, an architect must spare himself as much time and trouble as possible. For this reason it was highly desirable that the work of the architect and the engineer should run smoothly, and to achieve this it was important that they should collaborate throughout.

There seemed to have developed in some architects' minds a misunderstanding and suspicion as to the engineer's position and work. In this day of highly competitive work, keen cut prices, foreign competition and general trade depression, any movement for revision of the general order of things that would lessen the cost and increase the efficiency and utility of building operations should be welcomed by all engaged in such work. There was no one more able to help and guarantee successful results in reducing costs than the engineer, and as possibly forty per cent. of the cost of building work was expended in the structural carcase, it naturally followed that the structural engineer should be brought into consultation with the architect throughout every stage of an important job.

The engineer's job was to calculate the loads which would have to be carried by various parts of the structure; to determine by means of calculations the sizes, shapes and arrangement of the framework necessary to carry those loads, and to design and prepare his work in the most effective and economical manner. The architect's job was to clothe the skeleton with good and proper materials to keep out the wind and rain and protect the inmates from the burning rays of the sun, and, in clothing the skeleton, to use materials in such form and proportion as to complete a pleasing and effective work. The skeleton-framed building, either of steel or reinforced concrete, had no doubt come to stay, but why was it necessary to put the framework inside walls which formed an elevation, the design and details of which bore no relation whatever to the supporting structure? Under modern conditions, architecture seemed to have degenerated into the art of clothing a framework in such a way as to make the layman believe there was no framework to start with. Surely there would be nothing amiss in starting the building with a framework of steel or reinforced concrete and in admitting that fact by so arranging elevations, plans and sculpture that it was apparent the framework was really the structure.

Following on this argument, what more natural result than that the ideal combination for the ideal building of the future, would be the artistic genius of the architect coupled with the constructive ability and mathematical knowledge and training of the engineer. These two professions, working and collaborating in every way, could break away from the traditional and could evolve a style of architecture more closely in keeping with modern life, modern methods and ideals and modern business. In that as yet undeveloped material, reinforced concrete, architects had a wonderful opportunity of producing a new style, eliminating curves and producing beauty from straight lines and slightly raised surfaces. The proper development of this material would only be possible by a close co-operation between architect and engineer.

Mr. G. W. Home said architects to-day were beginning to use the materials at their disposal in the best way. They were not satisfied with a façade behind which was a structure designed by somebody else.

Mr. S Bylander showed some slides, including the first welded structure put up in London.

Mr. J. H. Pearson said that under present conditions it was really essential for architect and engineer to collaborate to produce the best scheme.

Mr. F. A. Simpson said very few people could give the services of both architect and engineer.

Mr. W. L. Wood said that to show how far apart were architects and engineers, he had brought with him the rules and syllabus of the Civil Engineers' Associate Members' examination, also those of the Mechanical Engineers; and in neither case was there any word about design or anything connected with it.

Mr. E. Ambrose having spoken,

Mr. Goodhart-Rendel and Mr. Mourant replied briefly to the discussion.

A cordial vote of thanks was passed to both.

The Architects' Conference, Cambridge.

The annual conference of the Royal Institute of British Architects and its Allied and Associated Societies will take place at Cambridge from June 21 to 24. The Cambridge Chapter of the Essex, Cambridge and Hertfordshire Society of Architects have in hand the preparation of the programme.

SOCIETIES AND INSTITUTIONS

R.I.B.A.

New Members.

At a Council meeting of the R.I.B.A., held on Monday, March 6, the foliowing members were elected :—

AS HON. CORRESPONDING MEMBER.

Maurice Gras.

AS FELLOWS.

R. K. Ellison.
P. Hardy.
A. P. Lay.
E. E. Morgan.
M. Skinner.
F. L. Atwell.
Capt. C. C. A. Hobbs.
D. F. Ingleton.
W. A. Lea.

AS ASSOCIATES.

H. S. Ambrose, B.A. (Arch.) Lond. (Bartlett Sch. of Arch.).
R. Ashton (A.A.).
D. G. Bannerman.
E. Bedford.
T. Bertram.
V. D. Bouchard, B.A., B. Arch. McGill, (Sch. of Arch., Montreal).
Miss O. G. V. Briggs (Bartlett Sch. of Arch.).
A. Brown.
C. L. Bugler (Welsh Sch. of Arch., Cardiff.)
S. A. Comben (Bartlett Sch. of Arch.).
D. G. Cutler (A.A.).
E. Davies.
T. H. Eley.
S. Elgar.
K. Exell.
J. E. Farnsworth.
E. Firth.
J. H. Fowler.
E. E. Freeborn.
J. Galletly, Dip. Arch. (Edin.), (Edinburgh Coll. of Art).
K. W. Gearey, B. Arch. Lvpl. (Sch. of Arch., Liverpool).
D. Gillespie, B. Arch. Sydney (School of Arch., Sydney).
G. D. Griffiths.
H. L. Hare (Birmingham Sch. of Arch.).
D. Harvey, Dip. Arch. (Edin.), (Edinburgh Coll. of Art).
E. R. Heathcote, B.A. Cantab.
F. A. Hewitt.
A. W. R. Kendrick.
Miss E. L. Maclennan (Edinburgh Coll. of Art.)
W. E. Marston.
J. Miller (Glasgow Sch. of Arch.).
A. J. W. Morrison (Sch. of Arch, Edinburgh).
R. J. Page.
H. G. Pescod.
J. W. Poltock.
Miss O. M. E. Price (Welsh Sch. of Arch., Cardiff).
S. Ripley (Sch. of Arch., Leeds).
H. J. Risbridger.
G. Robb.
A. Robinson.
F. L. Rothwell.
J. K. G. Sarjeant (Bartlett Sch. of Arch.).
J. J. de Segrais.
C. B. Smith.
H. B. K. Smith, Dip. Arch. (Lvpl.), (Sch. of Arch., Liverpool).
W. C. B. Smith.
C. A. Spivey.
D. B. Stark, A.A.
R. O. Sutherland.
W. T. Sutherland, Dip. Arch. (Edin.), (Sch. of Arch., Edinburgh).
E. G. Thacker.
T. E. S. Thwaite.
C. R. Tozer.
W. Underwood.
W. G. Walmsley.
A. B. Waters.
P. G. K. Watkinson.
F. E. Woolley.
W. G. Wright.
Miss B. Wrinch.
H. Wyatt, Dip. Arch. (Lvpl.), (Sch. of Arch., Liverpool).

AS LICENTIATES.

H. Avison.
J. C. Hall.
G. Helson.
I. L. James.
L. H. P. Patten.
C. W. M. Potts.
S. E. Tarrant.
W. E. Welch.

Exhibition of Working Drawings.

On Tuesday, March 14, a students' evening was held in connection with the R.I.B.A. Exhibition of Architects' Working Drawings. There was an excellent attendance of students, who spent a considerable time inspecting the exhibition, which includes drawings lent by :—Mr. Joseph Emberton F.R.I.B.A. (Royal Corinthian Yacht Club, Burnham-on-Crouch); Mr. C. H. Holden, F.R.I.B.A. (Sutton Valance School Chapel; Arnos-grove Station, Piccadilly Railway; Metropolitan District Railway Offices, Acton); Messrs. Ivor Jones and Percy Thomas, A/F.R.I.B.A. (Swansea Civic Centre, a small public-house); Messrs. Richardson and Gill, FF.R.I.B.A. (St. Margaret's House, Wells-street, W.1.).

Mr. Joseph Emberton, Mr. Percy Thomas, Mr. F. Hyde (representing Messrs. Richardson and Gill), and Mr. C. Hutton and Mr. T. Haiseldon (representing Mr. C. H. Holden) attended and explained to the students the special points of interest in their respective drawings.

Soane Medallion and Tite Prize.

In the United Kingdom 114 students took part in the preliminary competition for the Soane Medallion, and 241 students took part in the preliminary competition for the Tite Prize. The following students have been selected to take part in the final competitions :—

Soane Medallion.—Mr. J. C. Clavering (Armstrong College), Mr. W. E. Cousins (Liverpool School of Architecture), Mr. Dudley L. Couves (Armstrong College), Mr. F. Norman James (Architectural Association), Mr. J. C. B. Price (Bartlett School of Architecture), Mr. F. A. C. Maunder (Armstrong College), Mr. Glyn Roberts (Liverpool School of Architecture), Mr. Wilfrid J. Scott (Armstrong College), Mr. C. E. Westmoreland (R.A. School of Architecture).

Tite Prize.—Mr. P. M. Barnes (Department of Architecture, Sheffield), Mr. H. T. Cadbury-Brown (Architectural Association), Mr John W. Davidson (Department of Architecture, Sheffield), Mr. Philip B. Dunthorne (The Polytechnic, London), Mr. Harry Gibberd (Birmingham School of Architecture), Mr. H. I. Gordon (Liverpool School of Architecture), Mr. Arthur D. Kirby (Royal West of England Academy), Mr. Adam Paton (Glasgow School of Architecture), Mr. Paul K. Pope (Royal West of England Academy), Mr. David W. Roberts (Welsh School of Architecture), Mr. Herbert Tayler (Architectural Association), Mr. Edward V. Tibbits (Architectural Association), Mr. Bernard G. White (School of Architecture, Southend-on-Sea), Miss M. J. Blanco White (Architectural Association).

EDINBURGH ARCHITECTURAL ASSOCIATION.

Annual General Meeting.

In his address at the annual general meeting of the Edinburgh Architectural Association, held at 15, Rutland-square, the President, Mr. James A. Arnott, F.R.I.B.A., put in a plea for a Building Centre in Edinburgh similar to that recently instituted in New Bond-street, London.

He also stressed the importance of all qualified architects being registered before the end of the current year. It was probable that within the next few years all professional work of any status would and could be undertaken only by architects on the register. This procedure had been followed in Rome since 1887.

The speaker then referred to the great number of leading architectural prizes which had been gained in recent years by members of the Association who were students at the Edinburgh College of Art. He cordially congratulated the prize-winners and College alike, and urged the students to continue adding to the name and fame of Edinburgh as a centre of art and architecture.

Mr. Arnott was reappointed President for the ensuing year, while Messrs. Balfour Paul and Reginald Fairlie were appointed vice-presidents; Messrs. Alfred Greig, J. R. M'Kay, P. R. M'Laren, T. C. Marwick, John F. Matthew, W. T. P. Bryce, G. S. Taylor, and J. D. Carnegie being added to the Council vice members retired. Standing committees and conveners thereof were also elected, while Messrs. Lorne Campbell, Wilson Paterson, John Wilson, and G. S. Taylor were appointed along with the office-bearers as Chapter representatives to the Council of the Royal Incorporation of Architects in Scotland.

In his report as secretary and treasurer for session 1932-33, Mr. Nicol Bruce, W.S., stated that the present net membership of the Association was 390, there having been an accession of 129 new members during the past three years.

The competition prize-winners of the Associate Section were :—Miss Inch Morrison and Messrs. P. R. Whiston, P. A. Robertson, R. H. Taylor, W. I. Thomson, and A Reiach.

GLASGOW INSTITUTE OF ARCHITECTS.

Annual General Meeting.

At the annual general meeting of this Institute, held recently, the question of the relationship between private architects and public authorities was referred to by Mr. A. Graham Henderson, F.R.I.B.A., the President, who said he thought they could say that they were getting a little nearer to a position satisfactory to them. Public authorities were beginning to realise that the private practising architect had something to give which the official architect could not give, and should not be expected from the nature of his employment to give. On their part, he thought they now realised that they must do something more than pass resolutions, and that if they were to improve the position for the private practising architect they must keep constantly before the authorities and the public the value of the services which they could render.

They, as an Institute, deprecated any statements which took the form of personal attacks upon work carried out by officials. Such attacks, even if justified, which was often not the case, were not sound argument, or necessary for the vindication of the principles which they were upholding.

They would observe, he continued, that the Conditions of Contract Special Committee had completed their labours, and that presumably new conditions of contract would shortly be issued. He wished it were possible to report that the revision of their building regulations was so far advanced. He was assured, however, that the matter was not being lost sight of, and he hoped that during the coming year they would see this revision complete.

Attention had already been drawn to the loose methods which were still in vogue, particularly in their own area, of estimating for even entirely new work. Scheduling from incomplete particulars, which involved remeasurement, undoubtedly caused additional expense in measurers' fees, and the possibility of extras which were difficult to adjust and explain. This question was under the consideration of a committee of the Incorporation, with the whole question of measurers' fees.

Turning to the question of education, with which was involved the subject of entrance to the profession, he was strongly of the opinion that drastic steps would have to be taken at an early date to bring these subjects under their more direct control. The policy of the Board of Architectural Education, with which he personally disagreed, was to divorce the training of young architects from the old principle of apprenticeship, and to set up colleges which encouraged men to come into the profession without regard to the prospects for their ultimate employment. If architecture were a profession which could be taught wholly by such collegiate methods, less objection might be taken to this, but it needed no argument of his to prove that this was not the case, and that a man trained under such a system might have the full nominal qualifications without any of the practical knowledge for carrying on an architect's business.

There were other aspects of the education question that might also require consideration, such as the relation of the teaching staff to their duties and private practice, and the relative value of day and evening courses as qualifications of competency. He wanted to make it clear that he was not antagonistic to their excellent educational courses, but there were certain aspects of their working which required direction and control.

Regarding future prospects, the President said they all hoped that improvement in trade conditions would not be long delayed, realising, as they did, that there could be no improvement for the building trade and for their own profession until such occurred. No doubt they were following with interest the efforts which were being made by the Royal Institute in conjunction with the building trades, to show the disastrous results which might follow from a too literal and rigid application of the policy of economy. The Government were being urged to proceed with essential constructive work, not only to provide employment, but for social development, and as a lead to private enterprise.

They welcomed the renewed and successful efforts made by the Civic Society to interest the public in the questions of future development and amenity. This was even more essential at the present time, when the tendency was towards large-scale speculative builders' schemes.

Mr. Henderson was re-elected President, and the Vice-Presidents appointed were Mr. William Cowie, Mr. G. Gardner M'Lean, and Mr. Colin Sinclair.

THE TOWN PLANNING INSTITUTE

THE TOWN AND COUNTRY PLANNING ACT.

Mr. F. Longstreth Thompson (President) took the chair at a meeting of the Institute, at Caxton Hall, Westminster, on March 10, when Mr. H. H. Humphries (City Engineer, Birmingham) read a paper on "Town and Country Planning Act, 1932, and Town Centres."

The lecturer first referred to the difficulty of compressing into a paper of reasonable length views as to the possible effect of the new Act on the replanning and redevelopment of existing urban and central areas of cities and towns. He pointed out that industrial towns were those which had suffered most intensely from the want of town planning powers. Town planners, therefore, hailed with joy the prospect of a comprehensive Town and Country Planning Bill being approved by Parliament, and although their high hopes had, in many instances, been greatly dashed, owing to modifications of many of the original proposals so earnestly desired and believed to be so necessary, yet they had to recognise that if the utmost possible use was made of the provisions of the Act they would be found to be of great value in vastly improving the future of their towns. Now that these long delayed powers had been granted they had to note those provisions which might limit the value. For example, the Minister might vary the area to be included in a scheme and might, therefore, reduce it. The Minister, too, "*shall not* approve" a resolution to prepare a scheme in regard to any land already built upon unless he was satisfied (*inter alia*) "that public improvements are likely to be made or other development is likely to take place within such a period of time and on such a scale as to make the inclusion of the land in a scheme expedient." In this connection, who could say what amount of prospective development or public improvements would be regarded as adequate to justify a scheme? The general tenour of this condition would seem to preclude any large wholesale replanning of a town centre unless there was an undoubted immediate likelihood of more or less extensive redevelopment and the local authority were prepared to commit themselves to extensive works of general improvement within a comparatively short time which, of course, in some cases would not be practicable. In the built areas of industrial and commercial towns it would seem as desirable to plan as well ahead as it was in the case of unbuilt areas and not have to wait until there was no doubt of redevelopment taking place.

As regarded the question of redeveloping areas, the new Act did not make any special distinction between planning undeveloped and developed areas, such as town centres, except in the matter of the proviso, requiring the Minister to be satisfied as to the amount of, and period for, prospective public improvements and developments. However, the conditions in the two classes of areas were so different that it was obvious that the provisions of a scheme for town centres must vary greatly from those for planning undeveloped areas. Thus each case would have to be dealt with specially, and much would depend upon the views of the Minister.

In the replanning of town centres greater and more varied difficulties had to be overcome than in the planning of undeveloped areas. There were so many established artificial conditions, apart from natural ones, to be taken into account in connection with the carrying out of street widenings, the construction of new streets, the provision of open areas, the interference with industrial and commercial interests, etc., that it became interesting to consider how far the objects desired in connection with a scheme for such areas could be better achieved under the new Act than under such powers as already existed.

An important feature of all town planning schemes was the question of building lines, and although there were powers incidentally helpful (such as Section 155 of the Public Health Act, 1875, which provided that when a house or building had been taken down the Urban Authority might prescribe the new building line for that particular site subject to compensation; and also the Public Health (Building in Streets) Act, 1888, which required a house or building to be kept back to the front main wall of the house or building on either side, without compensation), it was not until 1925 that general power was obtained to prescribe building lines on either side of an adopted highway (Roads Improvement Act, 1925), no new building other than a boundary wall or fence being allowable beyond the prescribed line except with the consent of the Local Authority. This power was especially useful because it applied to streets whether in built-up areas or not. Here again the town planning principle of "betterment," for what it was worth, was included as a set-off against claims for compensation through the property being injuriously affected. It was hopeful to note that while there were no specific powers in the 1925 Act, the reference to buildings being in general terms, the new Act distinctly stated, without qualification as to site, that with regard to buildings a scheme might include provisions not only for prescribing the space about buildings and limiting the number of buildings, but also for regulating the size, height, design, and external appearance, and, further, the imposition of restrictions upon the manner in which buildings might be used. Practical experience of schemes under the 1909 and 1925 Acts had shown how far these matters were applied in ordinary town planning schemes and in the model clauses and explanatory memorandum issued by the Ministry of Health as to the 1925 Act there was an illustrative table showing the different kind of buildings for different zones (including a separate zone for shops and business premises and another for industrial buildings and business premises), while as regarded buildings (other than industrial buildings), detailed restrictions as to height were indicated. Again, in relation to space about buildings, an illustrative table was given showing the proportion of a site on which building should be allowed in regard to various classes of buildings. It was fair to assume that under the 1932 Act somewhat similar control would be given in regard to any scheme sanctioned for a town centre. A serious qualification, of course, was that a large and comprehensive area scheme might not be approved, having regard to the limiting words already referred to.

The Elevations of Buildings.

Some control of the design of buildings was a highly valuable provision of the new Act, and this power, apart from its general advantage, should be particularly helpful in connection with the redesigning of streets or the construction of new streets, etc.; for questions of character, the required amount of uniformity, height, etc., of the buildings were of immense importance if full advantage was to be taken of the replanning of the streets in such a way as to indicate the character each street should have.

The setting up of an independent tribunal to decide the issue as to the suitability of elevation of a building was not new. For instance, it appears in a local Act, the Wednesbury Corporation Act, which provides that where a plan was submitted of a building (or addition) which would "seriously disfigure the street" the question of approval of the plan was referred to an Advisory Committee of three—a Fellow of the Royal Institute of British Architects, a Fellow of the Surveyors' Institution, and a Justice of the Peace, nominated by the Town Council, but not a member of the Council.

Speaking generally, the subject of elevational treatment was not one towards the cost of which it would be advisable to allow a local authority to contribute, because that might in some cases be an incentive for the submission of plans with unsatisfactory elevational treatment of a cheap and nasty character. Nevertheless, the power conferred by the 1932 Act would undoubtedly be useful, as design and elevation could so frequently be greatly improved without extra cost being incurred, or at all events without such cost being material in amount.

Another new feature in the 1932 Act was that a scheme might include provisions imposing restrictions upon the manner in which buildings might be used. It was difficult to say just in what way this power would be applied, but some idea was gained by the words added to the sub-section—viz., "including in the case of dwelling-houses the letting thereof in separate tenements."

Zoning, etc.

With regard to zoning, it was obvious that in a built area the conditions that determined the varying building densities of houses, industrial areas, optional areas, open spaces, etc., must necessarily be entirely different from those in connection with the planning of undeveloped areas; particularly was this so in a town centre. In other words, the replanning of a town had to proceed with much greater regard to the existing conditions than in the case of planning partly undeveloped areas. It was obvious that the zoning of a town with long-established varied development had to be done in as elastic a manner as possible, and the provision of "optional" areas was even more important than in the case of undeveloped areas, but there were certain instances where the requirements of zoning had to be fairly drastic.

While the question of interim development (*i.e.*, building operations or change in the use of land or of the buildings thereon, between the date that the resolution to prepare a scheme takes effect and the date when the scheme itself becomes operative) was dealt with in a short section in the 1925 Act, it was very much elaborated in a long and somewhat intricate section in the new Act, but broadly speaking there was no important change in principle. Although interim development was obviously a subject primarily concerned with such areas as would fall within a town-planning scheme of the normal type (*i.e.*, mostly unbuilt upon land), it would doubtless arise in connection with town centres. During the period between the inception of the scheme and its final approval (and that period would be somewhat longer under the new Act than under the old Act), property owners would want to pull down old buildings and rebuild on various sites or make extensions of existing buildings or build on those small plots of temporarily vacant land that one found here and there in built-up areas, or they might want to change the use to which a building was put. These proposed operations might be prejudicial in regard to street widenings, making of new streets, zoning or provision of open spaces, or other matters to be included in the scheme in its finally approved form.

One important aspect of the new Town Planning Act was the possibility of using it in conjunction with the exercise of the powers for slum clearance contained in the Housing Act of 1930. Unfortunately, there were only too many town centres that had slums either within or impinging upon them. The Housing Act of 1930 enabled a local authority to clear a slum area, and they might first acquire the land at cleared site value. It must be that there were many cases where such areas might have an important relationship to an area which it was desired to town plan, and the one scheme would help the other.

The importance of obtaining open spaces, although often of necessity small ones, in town centres, was very obvious when one considered the congested condition of most town centres. It was astonishing, however, what immense improvements might be made in a developed centre by merely opening out a square or circus here and there, and in suitable locations providing planted enclosures (giving main streets some parkway features), and also playing spaces for those children having to reside in central areas. By schemes under the new Act it would now be possible

to get such amenities, which would be of value both from the health and the æsthetic point of view.

Questions of compensation and betterment were always points of great interest in connection with town planning, and compensation to persons whose property is injuriously affected, and both were dealt with much more fully in the new Act than in the 1925 Act. As to compensation, broadly speaking there was no important change in principle.

After considering the Act itself, and endeavouring to estimate what would be the most favourable conditions that would be allowed in a scheme for a town centre, it was obvious that despite its checks and limitations this Act was of the greatest importance, especially when its powers were compared with those previously held by towns. Apart from the overriding power of Parliament in relation to each scheme the chief drawback seemed to be the possibility that the Minister would not entertain a comprehensive scheme that dealt with the whole of the built-up area of a town or probably even a limited number of schemes such as would be determined by the different conditions of development in different parts of the unbuilt upon area of a large town. A scheme might have to be limited by the degree to which within a reasonably short period development in regard to manufacture and trade would involve considerable rebuilding operations, and the degree to which the local authority would embark upon street widenings and the construction of such new streets as might be necessary in regard to building development and traffic conditions. If the application of the Act was to be interpreted other than with wide vision possibly only small replanning schemes would be able to be brought forward from time to time. It was to be hoped, however, that the great experience that had already been gained from town planning up to the present time provided against the possibility of too strict interpretation of clauses which would appear possibly to restrict the usefulness of the new Act about which they would all soon know much more than they did at the present time.

Mr. F. Hunt (valuer, London C.C.), proposing a vote of thanks to the lecturer, dealt at some length with the points raised. Touching on the question of static areas, he said that most of them would have considered that the Crown Estate, which included Carlton House Terrace, was of all places in London a static area, never likely to be invaded for business purposes, and yet in the course of a few weeks they found plans approved and building started before anyone awoke to the fact that a change was taking place. If such a thing as that could happen, could it be said there was a static area in any large town? He suggested that the new Act had not made the work of the town planner any simpler, particularly with regard to built-up areas. The lecturer had told them that the success of planning depended on wise buying, and it seemed that in the built areas they were not likely to get anything very useful unless the control of the property intended to be replanned came under one hand.

Mr. S. Hill (acting secretary, Manchester Joint Committee), said that whilst not wishing to draw as gloomy a picture as that drawn by Mr. Hunt, he did think town planners would have to change their ideas very materially in dealing with schemes for the re-development of a town centre. They were all agreed that the principle of establishing satellite towns and decentralising industry was right, but it was having its reflex, in connection with the de-development of the town centre, in so far as that centre would not go on extending for industrial and commercial purposes to any appreciable extent. Hundreds of acres of land adjoining the core of the city would have to be dealt with, involving the demolition of thousands of houses, and they would have to face the fact that this land would have to be replanned in some form for housing development. It would bring a new problem to town planners, for obviously they would not carry out the ideal of 12 houses to the acre in such areas. The question of street widenings or of new streets would not be so serious, as these things were done piecemeal. The most that could be said for betterment was that it was going to be a valuable set-off against claims for heavy compensation.

Miss Abraham, Mr. W. Harding Thompson, Mr. A. F. Brueton and the President also took part in the discussion.

STRUCTURAL ENGINEERS

TWENTY-FIFTH ANNUAL DINNER.

The 25th annual dinner of the Institution of Structural Engineers was held on Friday last at the May Fair Hotel, W.1, with Major E. C. P. Monson, F.R.I.B.A., in the chair. The guest of honour was Mr. W. G. A. Ormsby-Gore (H.M. First Commissioner of Works), and among the large company present were :—Sir William Prescott, Sir Patrick Duff, Mr. Sydney Tatchell, Col. C. H. Bressey, Messrs. A. C. Davis, M. F. G. Wilson (chairman, British Standards Institution), G. Topham Forrest, J. F. Butler, H. Schofield, Gilbert Ness, W. T. Hills, H. J. Scoles, Gower B. R. Pimm, J. Addison, A. N. Procter, H. Ferrington, N. B. Murgatroyd, A. G. Thompson, Colonel F. N. Falkner, Messrs. A. H. S. Waters, Ewart S. Andrews, J. S. Beard, W. Biggs, Austin Blomfield, G. S. Bowers, F. Milton Cashmore, R. V. Chate, B. Cooper, H. J. Deane, F. T. Dear, Louis de Soissons, W. Doddington, A. Kirkwood Dodds, F. M. Du-Plat-Taylor, J. Emberton, J. S. Galbraith, P. F. Gleed, L. M. Gotch, W. F. Granger, H. R. H. Gray, G. S. Harding, C. H. Heathcote, J. R. Leathart, J. Murray, G. Val Myer, I. B. Pite, A. D. S. Rice, Digby La Solomon, R. H. Harry Stanger, T. Stevenson, T. Wallis, F. G. Wills, C. Roland Woods, G. G. Wornum, and Major R. F. Maitland (Secretary).

When the loyal toasts had been honoured, the First Commissioner of Works submitted the toast of "The Institution." In modern construction, he said, the structural engineer was bound to play an ever more important part in any work employing steel and concrete, and what was clearly needed was the most intimate co-operation and mutual understanding between the modern architect and the modern structural engineer. There were bound to be difficulties in drawing the line between what was the proper function of the architect and the structural engineer. Where both did their work with mutual good will, and comprehension of their respective proper functions, one should get the right type of modern building. Where either was unduly subordinated to the other the marriage could not be a happy one! He wished that he could feel that in some of our modern buildings there had been a better mutual understanding. In matters of taste everybody was entitled to his own personal opinion, and there were some modern buildings where the structural engineer and the architect had attempted co-operation and where, in his opinion, for what it was worth, the result was not altogether a happy one. As an example, he would point to the new Lambeth Bridge. When he looked at that bridge, it struck him that whoever designed the main structure did the work extremely well, and produced a five-arch steel bridge of extremely fine proportions and design. On the other hand, the architectural embellishments in granite that had been superimposed on the work of the engineers—while, no doubt, excellent in themselves as individual parts—did not appear to his eye to have improved the appearance of the bridge. Inevitably, there was a different traditional approach to any construction in the mind of one who had had training as an architect and the mind of one who had had training as a structural engineer. But one realised that all through the history of construction the architect had been faced with the solution of problems which required the outlook and approach of the structural engineer, and, equally, that if the structural engineer was to succeed in realising his ideal of an absolute and purely functional structure, he must have something of the architectural sense. Yet he had personally felt, and from an early age, that if it were hard to believe that the architects of the future would add anything to the achievements of mankind comparable to the men of old, the engineers certainly had it in them to produce seven new wonders in the age of steel which could claim the admiration of subsequent generations.

Speaking of functional building, continued the First Commissioner, the young architects of his acquaintance all told him that, in architectural style and taste, we were in a transitional period midway between a traditional and classic past, and the ideal of the pure functionalism of the future. Certainly, in America and Sweden, and even in Germany, the aspiration towards that functional ideal had been carried further than it had in this country, except in the case of a few exceptional buildings. All success to the aims and aspirations of the functionalists, but he would enter a caveat—we were not constructing buildings and structures on a brand new planet, and the building or structure that aggressively disregarded its neighbours—however right and good in itself—would not be really right if it was unneighbourly. One element in our modern make-up was going to be a great help to structural engineers, and that element was the sometimes popular, but more usually unpopular, word "economy." The Institution of Structural Engineers was working on problems of greater economy in the cost of construction, and on getting the most efficient use of every ounce and pounds-worth of material. That was right; for, in a matter like that progress and economy walked hand in hand, though he knew there were people, including some architects in this country, who thought that they were always mutually incompatible.

The President, responding, said that it was sometimes stated that the structural engineer was engaged to design the structural works of a building, and the architect to put on the façade, though naturally the architect did not subscribe to that view. Actually, however, it should be that they both worked together for the common good. As an architect himself, he was aware that some architects looked upon the matter of building principally from the art standpoint; he could wish that they would be more stringent in insisting upon knowledge of the structural side. Architects would have to "buck up," or the structural engineer would come up on top! At the present time some of the buildings put up by structural engineers were fantastic; the Institution wanted to put an end to those, and had several committees, of 25 members each, looking into such matters as the modern functions of steel, concrete, brick and masonry. The results were to be seen in the periodic reports. As to the present condition of the building industry, he hoped that H.M. Government, as soon as they felt able, would allow many of the works that had been stopped to go ahead. It would be a real economy, for the money would be spent at home.

Sir Frank Smith, K.C.B., and Professor Sir Frederick Keeble, C.B.E., responded to the toast of "The Guests," proposed by Mr. A. H. S. Waters (vice-president).

INSTITUTE OF SOUTHERN RHODESIAN ARCHITECTS.

The annual general meeting of this Institute was held at Buluwayo on February 22. Mr. J. D. Robertson, L.R.I.B.A., the retiring President, presided. The following officers were elected for 1933-34 :—President : Mr. F. A. Jaffray, F.R.I.B.A., M.I.A. Vice-President : Mr. J. R. Hobson, M.C., F.R.I.B.A. Council : Messrs. S. Austen Cowper, M.C., L.R.I.B.A. ; J. D. Robertson, L.R.I.B.A. ; D. MacGillivray, F.R.I.B.A. ; W. J. Whiteside, A.R.I.B.A. ; A. A. Hotson, P.A.S.I. Mr. E. Pallett, L.R.I.B.A., was re-elected registrar and hon. secretary.

THE FLOODLIGHTING OF BUILDINGS

THE fifth conference for architects on electric lighting, held by the Lighting Services Bureau, was held on March 15, when Mr. H. Lingard, A.M.I.E.E., spoke on "Floodlighting."

Floodlighting, commenced the speaker, as applied to the illumination of building façades, brought the illuminating engineer and the architect into very close contact, since it had a profound effect upon the appearance of the architect's work, and only by careful collaboration could complete effectiveness be achieved. It was profound in its effect, and influenced the appearance of a building in much the same way as the quality of a musical instrument influenced the work of a composer. Systems of illumination were so often misquoted as floodlighting systems that it was as well to have a definition of what the term floodlighting implied. By floodlighting was meant the inundation or covering of surfaces with a more or less even distribution of light, and in its application to buildings those surfaces were usually in the vertical plane. The plane of reference for floodlighting was, therefore, the vertical, and not, as was the case in ordinary lighting practice, the horizontal (working plane). Without that proviso all general illumination would be floodlighting.

It must be assumed that the exterior of a building was made as pleasing, dignified, impressive, or beautiful as possible by the architect in order to secure the attention and appreciation of passers-by. During the daytime it received light from a hemisphere of sky (and occasionally direct light from the sun), and a certain character was secured by the interplay of light and shadow on surface irregularities in the form of mouldings, cornices, etc. All other objects in the vicinity, however distracting the nature, received the same impartial illumination. After dark the building fades into oblivion—or was floodlighted and stood out in sharp contrast to the black frame of its surroundings. That peculiarly favourable condition secured for the building a glance from even the most casual passer-by, and if the floodlighting was tastefully executed everyone would carry away a favourable impression of the edifice. Due to the greatly increased attention secured for a building in this manner, it might be said that every floodlighted hour was worth many daylight hours. In deciding on the system of floodlighting to adopt we were faced with the following alternatives:—(1) To attempt to imitate the daylight appearance of the building. (2) To obtain an entirely different night picture from the daylight appearance. It seemed that the ultimate solution to the problem must rest with the architect, who was possessed of the requisite æsthetic sense to say with authority whether this or that effect of light and shade was satisfactory, but at the same time it was the engineer's responsibility to indicate to the architect the possibilities of modern floodlighting apparatus. Superficially, it might seem that the best type of floodlighting for any exterior would be that simulating daylight conditions, but while that might be true for buildings of classical design, much greater variety and flexibility was obtained on buildings of modern design when the second alternative was adopted. It should be noted in passing that whereas there were practical difficulties in floodlighting so that the shadows fell from above, it was usually comparatively easy to arrange for an upward or sideways throw of shadow.

Factors Governing Effectiveness.

In deciding whether a building is suitable for floodlighting it was essential to consider the influence of the following factors, otherwise much time and money might be spent with but a poor result. The effectiveness of a floodlighting installation was entirely dependent upon the amount of light reflected by the building surface; thus floodlighting on a perfectly black building produced no result whatever, while a dark stone surface with a reflection factor of 20 per cent. requires four times the light to appear equally as bright as a white stone surface with a reflection factor of 80 per cent. Buildings which had become darkened with age could, however, be effectively illuminated after cleaning, and, in view of the fact that the cost of cleaning averaged about 5s. per square yard of surface, that was certainly a less expensive method of approaching the problem than that of using excessive wattage to produce the same result. It was quite obvious that a building in an important and well-lighted street would require greater illumination to be equally outstanding as one in a suburban area, while the floodlighting of a light-coloured isolated building on, say, an arterial road could be effected with an astonishingly low wattage. Again, while in the early days of floodlighting it was the usual practice to assume that the whole building front would be floodlighted, latterly there had been a tendency to floodlight only the upper sections of buildings in crowded city areas where the close packing of comparatively high structures prevented much view on the whole elevation at one time. The London Underground headquarters at St. James's Park and the Shell-Mex building were well-known London examples of this tendency. Where an elevation was designed with the express object of producing unusual night effects, very interesting results were obtainable by the brilliant floodlighting of certain sections of the façade, while other sections were left in comparative darkness. That localised application of floodlighting in which the gradation of light on the surface was controlled to a nicety, had not up to the present received very much attention, due in all probability to the fact that the installation of floodlighting had been an engineer's job. It represented, however, a valuable field for experiment, and it might be that the future development of floodlighting under the ægis of the architectural profession would be along such lines as these.

In conclusion, said the speaker, one of the most important points in connection with the satisfactory design of floodlighting installations was the concealment of the projectors. It was of paramount importance that that point must be carefully considered by the architect when planning a building which might have to be floodlighted at some time. It should be impossible for the observer to see where the light was coming from, and the more mysterious the effect, the more attractive would be the installation.

FACTORY DESIGN

Mr. Thomas Wallis, F.R.I.B.A., has communicated to the R.I.B.A. the answers (from which we give abstracts) to questions put during the discussion which followed his paper on "Factories," read on February 20.

In answer to Mr. A. W. Kenyon (who asked for a method of calculating the proportion of skylight area to floor area), Mr. Wallis writes:—"The nearest average proportion I can give is as one is to three. It is unsafe, however, to adopt any particular proportion, as so much is dependent upon construction and layout of the building. By this I mean that in a north-light factory the effective lighting, where it is required, is, of course, dependent greatly on reflection from the underside of the south slope. If this is good and the angles of the saw-tooth roof correct, the actual glass area can be reduced; but if the spans of the trusses are wide and reflection reduced, glass area should be bigger. You further asked my views on cost—this is a point which I did not dwell upon in my paper, as it is influenced by so many and varying principles. When I say that I have built factories at an inclusive cost of from 5s. 6d. per foot super to as much as 28s. per foot super, and when I say that the latter figure was, for its particular purpose, the more economical, I think you will realise my difficulty in giving a definite reply."

In response to Professor C. H. Reilly, O.B.E., M.A., who raised a question regarding the use of models: "We do make models for our factories in a great many instances, not so much for our own purpose, but to simplify the work of the plant engineers in setting out the plant. We make models in box form into which machinery and conveyors are then put; it is very easy by this means to get the correct shape of a building as required by the layout of the plant."

Answering Professor Beresford Pite: "You ask for particulars of my experience of ferro-concrete factories *v.* brick factories, and by this latter I assume you refer to steel-framed buildings with brick filling. So far as one-story buildings are concerned, steel-framed buildings with brick or concrete walls are more economical in every way. With regard to multi-story buildings, things, however, are different, and I prefer ferro-concrete for their construction. In the London area, steel buildings have to be encased, and I have therefore found the steel-framed type of building more expensive, unless the spans of the beams are great, and even then I prefer a combination of ferro-concrete and reinforced steel wherever the local authorities will allow such a construction. Outside London it is cheaper and quicker to construct skeleton-framed steel buildings, and where the risk of fire is not great there is no disadvantage in this type of building. You further ask a question regarding subdivision for fire resistance. As you say, you are bound down in London to the requirements of the L.C.C., and also in certain other towns, such as Liverpool and Glasgow, you are equally tied. With regard to what I call outside areas, there are generally no local by-laws restricting large open spaces, but it is nearly always found economical by the industrialist to divide off his building and so get advantage of reduction in fire premiums, especially where a risk in one department is far greater than in an adjacent department. With regard to the covering of flat roofs, I assume you mean the action of the sun on the asphalt or other finishing, and not the insulation of the slab against internal effect. It is true that asphalt deteriorates during a dry, hot summer, and to overcome this as far as possible we lay asphalt flats perfectly flat and not to a fall, so as to accumulate as much moisture as possible. We have even gone as far as to make weir overflows higher than flat level, so as to collect a depth of water on the roof. I have gone further still and provided water points for flooding the roof in very hot weather. Aside from the protection by water you can also protect by gravel in a similar way to what is common practice on the Continent. Besides asphalt there are various forms of bitumen and felt roofings on the market which are resistant to the sun's rays, but most of these are more expensive and not good in appearance."

In answer to Mr. R. Wynn Owen (who raised a point with regard to the construction of a building where the final requirements are unknown and asked for an adjudication between a steel and ferro-concrete structure) Mr. Wallis writes:—"It is my experience that alterations can be carried out to a concrete building equally well as to a steel building, and further, providing proper provisions are made, a concrete building is as easy for attachment as a steel-framed building. You further ask the advisability of a factory architect co-operating with a civil engineer, and I say definitely that an architect is not a factory architect unless he is also a civil engineer."

In response to Mr. Hal Williams (who asked what the lecturer's experience was with regard to white concrete buildings) Mr. Wallis writes:—"If properly constructed they can be satisfactory, providing the aggregate is suitable. Please note, I do not neces-

sarily refer to buildings rendered in white cement. It is true that this finish weathers quicker than other finishes, but I say that when this weathering is complete the appearance is not distasteful. I have been told from many quarters that the Firestone factory, the front of which was constructed with white cement, has even now a very pleasing appearance."

Replying to a point raised by Mr. H. S. Goodhart-Rendel, Mr. Wallis states:—"I would like to explain that our buildings on the Great West Road have not façades which represent only just a veneer on them. These buildings have the administration offices on the front, and I am of the opinion that although the offices adjoin the factory, an administration office is entitled to an architectural treatment just as much as any City office."

THE WEEK IN PARLIAMENT

THE ADELPHI ESTATES BILL.

The second reading of this Bill was moved in the House of Lords by LORD NEWTON, who said that its objects were to remove restrictions on the height of buildings, to widen the street, and to construct two new roads at separate levels. It was proposed that one of these roads should pass along Adelphi-terrace. It was on the last point that the real opposition to the Bill arose. The promoters of the Bill had handed over 800 square feet of their property to the public, which represented a sum of about £60,000 to £80,000. Many people were under the impression that the Bill was to enable an owner to pull down Adelphi-terrace. No Bill was required for that purpose. The Adelphi estate and Adelphi-terrace were private property, and the owner could pull down the buildings whenever he liked. The Adelphi estate was originally laid out by the Adam brothers. Later, Acts were passed enabling adjoining owners to erect the Savoy Hotel and the Shell-Mex buildings. The proprietor of the Adelphi estate asked to be allowed to do what his neighbours had been allowed to do, but he was told that in no circumstances could that be permitted, because his property contained buildings of artistic value and many people strongly objected to interference with the buildings. The owner was to be penalised for those reasons. If it were sought to prevent a man doing what the owner of this estate sought to do, surely he had a right to put his case before an independent tribunal in the shape of a Parliamentary Committee. To be a London landlord was apparently, in the opinion of many people, to be *ipso facto* a criminal. He would remind the opponents of the Bill that it was purely an enabling measure; the promoters did not bind themselves to do anything at once, and he thought that it was quite likely that nothing would be done at all.

LORD ESHER, moving the rejection of the Bill, said that under the Bill the central block would be pulled down. Adam-street, John-street and Robert-street, instead of being the charming streets they were now, would have low, eighteenth-century buildings on one side and high modern buildings on the other. Therefore the elevation of these three streets would be entirely ruined from the artistic point of view. Any raising or lowering of the level of John-street would ruin the façade of the building of the Royal Society of Arts, one of the finest buildings in London. When the block behind was pulled down the promoters of this Bill proposed to build in its place a still larger block which would come out right over the present terrace and over the foreground in front, and the present terrace would be a tunnel underneath a "Shell-Mex" building which it was proposed to erect. Once they began to pull about a piece of town-planning of this sort, it was perfectly certain that the rest of it would go. The whole lay-out of the Adelphi was a delightful and charming piece of eighteenth-century town-planning. The arches on which it was built were most graceful, and the cellars beneath were like a piece for a novel by Dickens. In addition, there was the historical interest attaching to it. Foreigners coming to this country made a point of visiting the Adelphi. It was curious that the promoters should bring in this Bill in March, for the Town and Country Planning Bill came into force in April, and this seemed to be just one of those areas to which the Act should apply.

In the debate which followed, the ARCHBISHOP OF CANTERBURY said that the block of buildings involved was the crowning achievement of the famous brothers Adam in designing on a large scale. Adelphi-terrace, in spite of partial defacements since 1872, was, in its quiet grace, its delicate balance and surface ornament, a thing of beauty which was entitled to be kept for ever.

LORD JESSEL declared that the only way to preserve the Adelphi buildings in their present form was to secure their purchase by some of the learned societies interested in the matter.

LORD OLIVIER and LORD DICKINSON also opposed the Bill.

LORD HALSBURY urged that the Bill should go to a Committee in order that the whole question might be examined.

The Bill was read a second time by 64 votes to 27.

Rural Housing.

SIR PERCY HURD asked the Minister of Health whether the contribution of £1 per house payable by a county council under Section 34 (2) of the Housing Act, 1930, towards the provision of a house for a member of the agricultural population in a rural district applied to the case of rehousing under a clearance or improvement scheme; what in that event was the total weekly rent equivalent of the assistance obtainable under the Act for slum clearance; and whether means would be taken to make this position more widely known among county and district authorities.

SIR HILTON YOUNG said that the reply to the first and third parts of the question was in the affirmative. For each three-bedroomed house provided under the Act the total of the contributions under the Act was approximately equivalent to a weekly sum of 5s. If the house was in an agricultural parish the weekly equivalent was 5s. 6d.

British Materials.

MR. ROBINSON asked the Minister of Health whether he was satisfied that local authorities were loyally observing the condition as to the use of British materials laid down in Circular 1,060 of December, 1929.

SIR HILTON YOUNG said he had no reason to think that local authorities were not generally acting in accordance with this circular or that any further circular was called for. Where a local authority applied for his sanction to a loan, and he became aware that they proposed to use foreign materials, he satisfied himself as to the circumstances and conditions of the proposal before the loan was sanctioned. Consent to alterations in a specification had been given in a few cases where Government grant had been sanctioned, and good cause was shown for the use of foreign materials in place of British.

Direct Labour.

MR. MUNRO asked the Minister of Health if he would state how many applications he had received from local authorities for sanction to the erection by direct labour of housing schemes since January 1, 1932, and how many such applications had been approved.

SIR HILTON YOUNG said he regretted that figures in the form desired were not available. Since the date in question forty-six local authorities in England and Wales had commenced house-building operations by direct labour.

INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

We do not undertake to reply to inquiries concerning proprietary materials.—ED.

QUESTIONS.

John Nash: Biographical Material Wanted.

SIR,—I am engaged upon a biography of John Nash (1752-1835), the architect, and should be very glad to hear of any letters or drawings connected with Nash, now in private hands. If any of your readers would inform me of the whereabouts of documents of this nature I should be extremely grateful.

JOHN SUMMERSON.

Limited Competition.

SIR,—In a recent limited local competition, with no professional assessor, it was agreed to pay each competitor a small lump-sum fee, whether successful or not. The winning competitor was asked to redraft his scheme to give revised accommodation and arrangement, which he did; after which the scheme was abandoned. He has applied for the agreed lump sum plus a fee for abandoned work upon the revised scheme, but the promoters deny liability for anything but the lump sum. What can he do? COMP.

Scale Fees.

SIR,—I understand it has been laid down in high professional circles that an architect is respecting the code of practice if he accepts a scale of fees lower than the R.I.B.A. scale, provided he is not thus undercutting other architects in competition. Does this mean a case where A and B are asked to quote fees and A undercuts; or is it merely a case of A and B practising in the same town and A getting the reputation of being a "4 per cent. man"? PRACTICE.

Repairing Fibrous Plaster Joints.

SIR,—I should be glad to know of a means of repairing and filling the joints of fibrous plaster ceilings, so as to make it a permanent job. D. D. S.

ANSWERS.

Surface Covering for Wooden Bungalow.

An answer to this question (March 10) has been posted to our correspondent.

Damp Walls and Floors.

An answer to this question (March 10) has been posted to our correspondent.

Hot Water Supply.

[ANSWER TO "DECORATOR," MARCH 17.]

SIR,—I think somebody has been leading your correspondent astray. There is no means of raising water from an open vessel, such as a copper, to a higher level, other than by a hydraulic ram, which, besides involving waste of water, is not applicable to a hot-water system. The water from a closed vessel, such as a proper gas circulator, can, however, be raised by gravity to supply taps at any level below the effective head of pressure. These fittings are similar to geysers and cost from £7 upwards net, and in this case could supply both the copper and the bath at a higher level, as well as other points. GAS.

"Spend for Employment."

Messrs. W. H. Gaze and Sons, Ltd., of Kingston, have adopted a scheme intended to aid in the relief of unemployment among skilled men in the industry: they are offering special advantages to householders and property owners for any decorations, alterations and repairs put in hand during the next month, and emphasise that not only are prices particularly favourable at the moment, but that the building societies are ready to finance decorations and alterations, etc. We understand that this firm has distributed a leaflet to this effect to their clients and to others who may be interested. We commend this plan as one which, at the present time, is likely to aid the industry.

THE BUILDING TRADE

MINOR PROBLEMS OF CONSTRUCTION AND REPAIR—XII

By A BUILDING SURVEYOR.

MINOR DETAILS OF STAIR BUILDING.

One of the points to which a builder should direct his attention almost as soon as he receives the plans with instructions to commence building a small house is the lay-out of the staircase; for in a large number of cases he will find that modification is needed at some point or other, and occasionally that the proposals shown on the small-scale drawings are impracticable. It is not to the advantage of the builder that some of the contingency fund should be used up in correcting mistakes, and he best serves his own interests, as well as those of all others concerned, by doing what he can to avoid them.

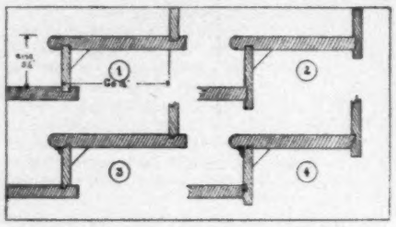
Generally, when his examination leads him to think that the lay-out of the stairs is not satisfactory, it is unnecessary to express any opinion on the matter, for a special request for a half-inch detail will put an architect on the alert.

It does not often fall to the builder to design a staircase, but it is nevertheless important that he should be familiar with some of the elementary principles, and have a fair all-round knowledge of the variations in methods of construction that may be made to meet differing requirements or comply with the limitations of the materials to be used. It is not proposed to deal with this subject at great length, but to draw attention to a few points that an examination of many detail drawings and the climbing of many stairs have led the writer to consider worth attention.

Well-designed stairs should be so easy and comfortable in use that the user should not be unduly conscious of them. Often, and in particular in regard to stone steps leading up to memorial and other buildings, the mistake is made of making the riser too shallow and the tread too wide, with the result that they impose as much fatigue on the user as a stair that is too steep. A stair, however, that is much too steep is worse than one too shallow. Many endeavours have been made to arrive at an agreed rule as to the correct relative width of tread to height of riser, and though opinions differ, it is a generally accepted maxim that the greater the breadth of a step the less should be the rise; and conversely, the less the breadth of the step the greater the rise. Old authorities state that a step having 12 in. of width and 5½ in. rise should be accepted as standard and perhaps as the ideal. From this it is not difficult, by the use of inverse proportion, to find the appropriate width once the rise is settled. A simpler way, which gives well-proportioned steps, is to adopt the dimensions of the standard step as a key (marked *) and set down two columns of figures in arithmetical progression, the first showing the width of steps ascending by inches, and the second showing the rise descending by half inches. In using these calculations only the distance from the front of a riser to the front of the next one must be taken into consideration, any projection of step nosing being disregarded (see diagram 1). In relation to the tread of the standard step it is of interest to note that the length of a size 9 boot sole is almost exactly one foot. And it may also be said that apart from the question of fatigue, on badly proportioned stairs there is a further reason for ignoring the projection of tread nosings as the additional amount of foot room made available by their use is lost in the descent of stairs; in this lies the danger of attempting to disguise the steepness of the stair by giving additional projection to the nosings. Nearly all accidents on stairs occur during descent.

Treads	Risers
8	7½
9	7
10	6½
11	6
*12	5½*
13	5
14	4½
15	4
16	3½
Inches	Inches

The accompanying diagrams show several of the more usual methods of framing together the treads and risers, but the purpose for which they have been drawn is to illustrate one or two points bearing on the limitations of the materials used, and on costs. When stairs are to be constructed of yellow or red deal, it is necessary, where economy is of first importance, to remember that this is not ordinarily obtainable in greater widths than 11 in., and that not more than 10½ in. can be counted upon after the stuff has come off the machines. Jointing and cross tongueing adds considerably to the cost. With so little as ⅜ in. projection of the nosing and ¼ in. entry into the riser the maximum tread that can be counted upon when the steps are framed up as in diagrams 2 and 4 is 9½ in. The appropriate rise to that is 6¾ in. Where the height, as in many small houses, is 9 ft. from floor to floor, 6¾ in. is a very good rise to adopt, for it works out evenly with sixteen steps. And having regard to the dangers of want of sufficient footroom, a reduction of the width of the tread which, according to the canon, we should have to



make if we increased the rise, is very undesirable.

The advantage of framing after the manner of diagrams 1 and 3 lies in the fact that where the soffits are not seen when the work is finished, the housings can be trenched out to the bottom edge of the strings, and thus permit the driving in of tapered wedges, and these wedges can be finally driven home after the work has stood for a time. Formerly it was considered important to provide means of tightening up the work after the initial shrinkage had taken place.

When hardwoods are used some saving in cost may be effected by using constructions similar to 2 and 4 rather than 1 and 3. The price of hardwoods usually increases rapidly with wider boards, for the wide boards being cut out of bigger trees are worth more per foot super. It follows that the overall width should be stated in specifications and bills of quantities for the guidance of estimators.

Too much reliance should not be placed on glued blockings, for almost invariably one or other of the joints fails, and sometimes both. Some of the older joiners provided for this by using screws as well as glue, but if this is done there is little, if any, saving in cost of blockings as compared with a full-length angle piece. Where the width of the stairs is such as to make it advisable to use carriages, a continuous angle piece machined to size should be used. It is not improbable that blockings came first into use by reason of irregularities of thickness in the underside of treads and back of risers and then not being trued up or the boards thicknessed. This may also have had some influence on the methods employed when wedging the steps into the string housings.

Many speculative builders realise that a comfortable staircase, using that word to include the apartment or enclosure in which the stairs are fixed, adds much to the attractiveness of the houses they offer for sale. Some, however, regard the stairs as a necessary though space-wasting evil, and freely introduce winders, having precedents for this in the published designs of some architects. As ordinarily used, winders are a blemish on the design of any stair, though, as will be shown in the next article, they are less objectionable when they are used in a geometrical stair than in other cases. They are at their worst when they occur about half-way up an ordinary dog-leg stair, for by reason of the narrowness of the tread at one end the user is deprived of the assistance of the handrail. This makes them very dangerous to young children and to aged and infirm people, and particularly so during descent. In cases where the use of winders cannot be avoided it would be an advantage to fix a wall handrail along the wider ends, though even so they would still present difficulties. There is an obvious danger in using the narrow ends of winders and discomfort in using the wider ends. When users pass each other on winders, both are inconvenienced.

PATENTS

APPLICATIONS PUBLISHED.*

387,074.—G. Desagnat: Wall coverings.
387,097.—K. Ottiker: Concrete road.
387,128.—J. T. Shevlin (Rostone, Inc.): Process for the manufacture of a structural material.
387,164.—T. E. McGrail: Radiators for heating buildings.
387,183.—British Thomson-Houston Co., Ltd.: Laminated wood products.
387,184.—Salviam: Construction of roads.
387,185.—D. H. Lee: Metal framework for buildings.
387,202.—J. F. Barr: Method of contructing concrete piles *in situ*.
387,209.—H. O. Parrack: Mixing and pouring of cement grout.
387,211.—K. Morita: Lining surfaces such as walls and floors with glass plates.
387,225.—A. C. Olsen: Ceiling, wall, and partition construction.
387,290.—J. Fowler & Co. (Leeds), Ltd., and P. R. Hasson: Gully emptying and recharging apparatus.
387,057.—P. G. Johnson: Means for enabling pipe mains to be inspected and cleaned.

* All these applications are now in the stage in which opposition to the grant of patents upon them may be made. *Note.*—Period for opposition expires on April 8, 1933.

BOOK REVIEW

Laxton's and Lockwood's Builders' Price Book. London: Kelly's Directories, Ltd. Price 7s. 6d.

Now in its 116th edition, this price book covers a good deal of ground, probably more than any other of a similar character. First published to meet the need for some authoritative pricing as a basis for estimating and for checking accounts, the book has been expanded from time to time by the addition of numerous tables of memoranda, and much other matter of importance to the architect and the builder. Particularly useful is the table of "Shipping Marks on Timber," by means of which quality and origin may be checked. Similarly, with the list of "Proprietary Articles and Trade Names," the architect and builder may be saved much trouble when desirous of tracing the origin of articles of special make or pattern. The agreement arrived at by the Chartered Surveyors' Institution and the London Master Builders' Association with respect to charges for day works is included in this edition.

Survey of Indian Import Trade.

A survey (C.4090) of the import trade of India during the first nine months of the fiscal year, April 1 to December 31, 1932, prepared by His Majesty's Trade Commissioner at Calcutta, is now available from the Department of Overseas Trade, 35, Old Queen-street, S.W.1.

SCIENCE AND INDUSTRY

ANNUAL REPORT OF THE DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH.

We have received a copy of the Annual Report of the Department of Scientific and Industrial Research for the year 1931-32,* from which we take the following extracts relating to the building industry :—

New Buildings.

A building specially designed for the study of acoustic problems is approaching completion at the National Physical Laboratory. At the Building Research Station a new laboratory for research on cements and concrete products is nearing completion.

Reinforced Concrete Structures.

A Committee of the Building Research Board of the Department has been set up " to review present methods and regulations for the use of reinforced concrete in building, and to make recommendations for rules of practice embodying the best available technical information and experience."

Concrete Pile Driving.

The momentary forces existing only for 1/300th of a second which concrete piles have to withstand when being driven in as foundations of big buildings have been measured at the Building Research Station. The mechanical forces are converted into electrical forces by quartz crystals embedded in the pile, and are then recorded by the cathode ray oscillograph in much the same way as this instrument is used for recording wireless atmospherics at the Radio Research Station.

Weathering of Natural Stone.

A comprehensive report has been published describing the work carried out at the Building Research Station on the weathering of natural stone and linking up these results with the findings of other investigators, as reported in an extensive and scattered literature. In connection with the survey of building stone resources which is being undertaken in conjunction with H.M. Geological Survey, it has been found possible to apply a method of measuring the hydrostatic pressure deficiency in an unsaturated porous material to the determination in the laboratory of the probable weathering quality of Portland stone. The recording of atmospheric pollution at Garston and Westminster has continued, and a method has been developed which promises to provide a reliable index of the prevailing concentration of sulphur in the atmosphere over a period. The method, which consists in exposing standard cylinders coated with a preparation of lead peroxide, is being tested in collaboration with the Atmospheric Pollution Research Committee. The work in hand includes study of the attack of limestone by sulphur dioxide, the contamination of building stone by chlorides, crystallisation and exposure tests, the cleaning of buildings, the movement of moisture within a porous material, and the transfer of water through material in the form of vapour.

Cement and Concrete Products.

The research on cement has comprised study of the free lime content of commercial cements, the fineness of cements, their resistance to chemical attack, the content of the alkalies which are in part responsible for the staining of limestone by cement mortars and for the production of efflorescence on brickwork, the hydration of cement and cement compounds, and the reactions that take place when cement is stored in various ways.

The co-operative research on cast concrete products has centred round an investigation of the causes of crazing, and results so far obtained indicate that an irreversible contraction associated with atmospheric carbonation is to be considered a major cause of this defect.

The investigations on pozzolanas which are being carried out with the support of the industrial interests concerned are now in their final stage. It is hoped shortly to complete the main programme on the production of pozzolanas and the properties of mortars and concretes containing them. The more fundamental problems of the nature and sources of pozzolanic activity still require more detailed and intensive study.

Tests are being carried out, both in the laboratory and on an exposure wall, of the efficiency and durability of treatments employed for waterproofing the surface of brickwork and other building materials.

The work undertaken for the British Standards Institution in connection with tests to be embodied in standard specifications for building limes has embraced a study of magnesian limes, which has shown that all the specification tests can be applied to these limes save that for hydraulicity in the case of mortar limes. The co-operative research with the Greystone Limeburners' Association has continued, and a number of greystone limeworks have been visited in order to obtain an accurate knowledge of the conditions of production and of the stone used. The work on calcium sulphate plasters has been mainly concerned with the development of a standard specification.

A test has been devised which enables an approximate estimate of the weathering quality of slate to be arrived at with simple appliances and technique.

Other investigations are concerned with paint, sand-lime bricks, physico-chemical properties of silica gel, moisture movement of sandstone, and clay building materials.

Structures and Strength of Materials.

The measurements of the small movements occurring during the ageing of concrete have been continued, and have been extended to the lateral creep that takes place in a loaded specimen. The observations made show that there is very little tendency for the concrete to creep laterally.

Preliminary work has been commenced in connection with the formulation of rules of practice for the use of reinforced concrete in building.

A considerable amount of work has been done on the effect of temperature on concrete. Apparatus has been devised in connection with this study, which enables a continuous record to be obtained from laboratory specimens of the temperature fluctuations accompanying the setting and hardening of a large mass of similar concrete.

Investigations are also proceeding in connection with the strength tests for the standard specifications for Portland cements. With the co-operation of the Federation of Civil Engineering Contractors, a study of the effect of impact on reinforced concrete piles has been begun, and certain results have been published. Research on earth pressures and wind pressures also continues. The section of the programme concerned with pressures on roofs has been completed. Arrangements are being made for the publication of the results.

Efficiency of Buildings from the Standpoint of the User.

In the interim report of the Joint Committee with the Medical Research Council on Research in Heating and Ventilation, the Committee recommend the use of the eupatheoscope, designed by the Station, as a standard instrument, within its limitations, for the determination of the " equivalent temperature " of an environment.

The comparisons between radiant and convective systems of heating have been extended to ventilated rooms. An investigation has been made of the conditions obtaining in a school classroom heated by radiant heat and has provided a welcome opportunity of comparing the results of laboratory work with practical experience. Further tests have been carried out with glass sheets exposed to the sun in order to establish the relative values of several common methods of excluding solar heat. Experiments of a similar nature have been made with metal sheets to demonstrate the importance of surface characteristics in the exclusion of the sun's heat by thin roofs. An apparatus has been devised which will enable the architect to demonstrate by means of a model how sunlight has been taken into account in the planning of a proposed building. With this device the study of the insolation of the walls of a building is greatly simplified, and, furthermore, it is possible to determine with a simple model the manner in which the sun shines into the interior of a room. The effect of panelling on the rate of warming of a room and the distribution of ultra-violet radiation in a room have also been studied.

Steel Structures Research.

Arising out of the issue in 1930 of the First Report of the Steel Structures Research Committee and their recommendations for a code of practice for the use of structural steel in building, the London County Council Advisory Committee on the Amendment of the London Building Act has issued a code as a basis for the consideration of applications under Section 58 of the Act for relief from the provisions of the Third Schedule to the Act. The Steel Structures Research Committee's recommendations have also led to the issue by the British Standards Institution of a Standard Specification for the use of structural steel in building.

Strains in Buildings.—The strains due to loads applied at each floor in turn have been measured under the supervision of Dr. O. Faber, at eighteen sections of the five-story steel framework of the new Geological Survey and Museum building at South Kensington. The measurements were made, first, on the bare steel frame, and then after the floors had been concreted and the steelwork encased. Permission has been obtained from the Director, Geological Survey and Museum and from H.M. Office of Works, to retain gauges at seven of the sections, so that measurements may be made in the finished building during the first twelve months of occupancy.

Stresses in Building Frames.—The experiments on riveted and bolted joints, conducted by Professor Batho, of Birmingham University, have been continued. The work may be divided into two parts: (1) The behaviour of beam and stanchion connections under the various conditions of loading which may exist in a structure; (2) investigation of the problems involved in the use of bolts, including high-tensile steel bolts, in steel-framed structures. In connection with these experiments a special spanner, which ensures that a given torque is applied in tightening bolts, has been devised.

Full-scale tests have been carried out on the experimental steel frame erected at the Building Research Station. The strains, due to vertical loads applied to the beams, have been measured on a two-bay, three-story frame and on a single-bay, three-story frame with simple bracket and top cleat beam connections. The effect of adding fitted tees to the connections has been investigated.

Struts.—A certain amount of data has been obtained on the " equivalent length " to be assumed in the standard strut formula for varying degrees of end fixity.

Welding of Steel Structures.—Preparations have been made to carry out, with the co-operation of the metal arc-welding industry, a statistical investigation designed to give a measure of the minimum strength of a weld under commercial conditions. It is hoped to include in the investigation all makes of electrodes suitable for the welding of structural steel.

As a result of the activities of the Empire Marketing Board, and of the widespread desire on the part of the public to use Empire materials, there has been a large in-

* Published by H.M. Stationery Office. Price 3s. (by post 3s. 3d. Cmd. 4254).

crease in the number of applications for investigation and advice in respect of timbers of Empire origin. In order to demonstrate the possibilities of various of these, the Board Room at the Laboratory [at Princes Risborough] has been panelled, and more than thirty species have thus been displayed. Detailed reference is also made to the general programme of work carried out by the Forest Products Research Board.

Better Lighting.

Scientists have been carrying out investigations on the glare effect of various systems of street lighting and of coloured light sources. A survey has been carried out on the lighting of docks, quays and their approaches, and some experiments are being made with a view to finding ways of minimising the effect of reflections on shop windows. Tests have also been made, by the aid of models, on the effect of window size and the colour and reflecting power of walls on the daylight lighting of rooms.

Iron and Steel Research.

A new design of cupola for the manufacture of cast iron, developed by the Cast Iron Research Association, is giving very satisfactory results in practice, not only in fuel economy, but in the reduction of wastage. One firm, for example, who found their defective castings totalled 4.4 per cent. over a period of ten years prior to the installation of the new cupola, reduced this figure to 0.7 per cent. in one year by its use.

Frost Bursting of Water Pipes.

With the support of the water supply authorities and others, the Non-Ferrous Metals Research Association has begun a study of the frost bursting of water pipes by a thorough investigation of the properties of the materials used for them at low temperatures. Research on the quality of galvanised iron, with special reference to the corrosion of hot-water tanks, has also been started. Another investigation of the Association deals with the retention of brightness of polished white-metal such as that used for shop-fronts, name-plates, etc.

Fire Risks and Lighting Fittings.

Reduction of fire risks and increased life in the conducting leads in gas-filled lamps used for office and factory lighting have been brought about by the work of the Electrical Research Association, who have found means of reducing the temperature rise in the fittings for such lamps from about 100 deg. C. to 33 deg. C.

Reinforced Concrete Poles.

The report on reinforced concrete poles for overhead lines, prepared for the Electricity Commissioners, presents a critical study of British, Dominion and foreign practice from the standpoints of regulations, factor of safety, design, manufacture, erection and testing, and is the most comprehensive and authoritative document published on this subject.

Institute of Arbitrators.

The next examinations of this Institute will be held in London on May 8 and 9. Application to sit for the same must be deposited at the offices of the Institute on or before April 13. Copies of the syllabus and full particulars may be obtained upon application to the secretary at 10, Norfolk-street, London, W.C.2.

A Prize for Architecture.

Miss Henrietta May Poynter, of Oxford, who died on December 13, aged 81, daughter of Ambrose Poynter, architect, and sister of the late Sir Edward Poynter, has left £500 to the Royal Academy of Arts, the income to be applied in the purchase of books for a promising student in architecture selected by the President, the books to be inscribed, "In memory of Ambrose Poynter, architect, given by his daughter, H. M. Poynter."

WATER RIGHTS

Water supply plays an important part in many development schemes, and where water does not flow in a defined channel and the sources from which it springs are not apparent, then difficult legal questions may arise; indeed, we have heard that it has been said that to contest a claim of this description may end in the water costing litigants the price of wine.

A question of this nature has been raised in the recent case, Bleachers' Association, Ltd. *v.* Chapel-en-le-Frith Rural District Council, only at present briefly reported (*Weekly Notes*, November 26). The plaintiffs and their tenants owned and occupied bleaching works on the banks of the Carr Brook, in Derbyshire, which were supplied with water by the Rainside Spring. The defendant Council had at some time acquired a considerable tract of moorland which included the site of this spring, and in July, 1931, the defendant Council proposed to sink a shaft in the hillside about 31 ft. from the point where it issued and to drive adits from that shaft in several directions. One of such adits was to be driven from the proposed shaft to a point about 24 ft. from the point of issue of the stream.

The action was brought claiming an injunction to restrain the defendants from interfering with the spring, and after the writ was issued, by agreement, certain excavations had been made by the defendants under the supervision of the plaintiffs, apparently with the view of ascertaining the source of the stream. The contention of the plaintiffs was that the excavation had only proved more certainly that the water of the Rainside Stream was running in a defined underground channel into the site of the excavated shaft, but the defendants contended that the water which fed the stream before it reached the point of issue only percolated through the surrounding soil and did not run in any defined channel, and if it did it could not have been known to anyone unless the excavations had been made.

The Court held that the plaintiffs had failed to show that the water emerging as the Rainside Spring flowed in any defined underground channel or channels, and therefore they were not entitled to restrain the defendants from interfering with the flow of the underground water into the spring. But even if there was a flow in a defined underground channel, it was impossible to establish that any such defined channel existed, or that its course was known without excavation; and further, at the present time it was impossible to prove that any defined channel existed under the ground that remained unexcavated, and in either case the plaintiffs had failed to establish any legal right to the uninterrupted flow of any underground water, and the action was dismissed with costs.

The case, as we have said, is at present very shortly reported in a mere note, but its effect may be explained by reference to a case cited in the report—Bradford Corporation *v.* Ferrand [1902], 2 Ch. 155, which contains a valuable exposition of the law relating to this complicated subject. The learned judge in that case is reported as saying: "The rights in relation to water flowing in a defined and known channel on or under the surface of the earth are now well settled; every riparian proprietor has an equal right to the ordinary use of the water which flows in a stream adjacent to his lands as it has been wont to run (Miner *v.* Gilmour [1858], 12 Moo P.C. 151). This right is an incident to the property in the land through which it passes (Embrey *v.* Owen, 6 Ex. 252) and does not depend upon a supposed grant out arises *ex jure naturæ* (Shury *v.* Piggot, 3 Bulst. 339); but the right does not extend to water percolating through the strata in no known channels (Chasemore *v.* Richards, 7 H.L.C. 382) or to common surface water rising out of boggy or springy ground and flowing in no definite channel (Rawstron *v.* Taylor [1855], 11 Ex. 369)."

After this valuable summary of the law, the court pointed out that no English authority had dealt with the rights to water flowing underground in a defined but unknown channel, and that was the point which had to be decided in the case before it. But before referring to the judgment delivered it is important to explain the manner in which the case came before the court. The plaintiffs in the action had applied to the court for leave to enter on the defendants' land and to make the necessary excavations to ascertain the nature of the stream before its issue. This application was refused by the court below, but when the matter came before the Court of Appeal the motion stood over, on the defendants undertaking so to amend their defence that the following point might be raised in the trial:—Assuming that underground water flows to a spring in a defined channel, but that the existence and course of that defined channel is not and cannot be ascertained or known except by excavation of the soil, are the plaintiffs entitled to any right of action for the abstraction of such underground water?—This was very much the same issue as that raised in the case we are considering, and the court, in dismissing the plaintiff's claim in Bradford Corporation *v.* Ferrand, answered the above question in the negative.

In that case the court defined the expression "*ex jure naturæ*" in connection with the foundation of the right to the flow of a stream, as used in Shury *v.* Piggot, cited above, and in many other cases, as *æquum et bonum*, or fair and reasonable, and applying the principle thus defined held that it could not be fair and reasonable to restrict the owner of land under which an underground stream may run from making excavations on his own land or sinking a well, by holding that he incurred liability possibly to a very large amount to owners of land at a lower level, and the court was fortified in this conclusion by the decision of the Court of Appeal in Ireland in the case, Ewart *v.* Belfast Poor Law Guardians ([1881], 9 L.R. Ir. 172), and approved in another Irish case, Black *v.* Ballymena Township Commissioners ([1886], 17 L.R. Ir. 459), in which it was held that it was not reasonable or right that the lower owner should have any right to prevent the obstruction of a subterranean stream flowing in a defined but unknown course.

The two cases, the main subject matter of this note, thus appear to have set at rest that point which was undecided, as shown by the summary of the cases given above from Bradford Corporation *v.* Ferrand, until the decision was given in that case, viz., the right to water flowing underground in an unknown channel, as well as the point whether the nature of the stream, whether defined or otherwise, can as a right be claimed to be ascertained by excavation of the soil; but we may note that it was pointed out in the Bradford case that the principles there laid down have no application to such rivers as the Mole, which for part of their course run underground but reappear, for it could never be contended that the owner of the soil under which the stream ran could not maintain an action for its diversion (Dickinson *v.* Grand Junction Canal, 7 Ex. 300), as approved in Chasemore *v.* Richards (*ubi sup.*). In such cases there is a *terminus a quo* and a *terminus ad quem*, and knowledge of the existence and the course of the stream must be presumed. Thus it is clear that knowledge of the nature of underground streams is a material point.

Chartered Surveyors' List.

The List for the current year of the members of the Chartered Surveyors' Institution is now issued from 12, Great George Street, S.W.1 (price 2s.).

OUTLINES OF THE LAW OF HOUSING AND PLANNING*

THIS little volume is based on notes of lectures delivered at the University of Liverpool by the author as Special Lecturer in the Law of Housing and Town Planning, and in the preface it is stated that many requests have been received for the publication of these notes, and the author hopes they are now presented in a form which may be of service not only to students preparing for the examinations of the R.I.B.A., the Town Planning Institute, the Chartered Surveyors' Institution, the Institution of Municipal and County Engineers, and similar organisations, but also to members and officers of local government authorities. From the title of the work and the very interesting introduction by Sir Leslie Scott, at first sight the impression might be derived that the work is solely or mainly devoted to Housing and Planning, but this is not the case as, to make it self-contained, the author has incorporated certain portions of the relative chapters from his works "Outlines of Local Government" and "Outlines of Central Government," and much information is given as to the structure and organisation of local government, and as to the central departments by which it is controlled, legal proceedings by and against local authorities, and matters relevant to housing and town and country planning in the Public Health Acts, and there are chapters dealing with roads, both highways and private streets, the Road Traffic Act, 1930, the acquisition of land, and other subjects. Forty-four pages are given to the Housing Acts and sixty-nine to the Town and Country Planning Act, each Act being preceded by a short historical summary.

We cannot pass over Sir Leslie Scott's interesting introduction without any notice. Sir Leslie, at page x, in arguing that the Town and Country Planning Act, 1932, contains a mandate to secure the widest possible ordering of the land in order to ensure its best utilisation in the national interest, prays in aid, in addition to the title of the Act which is "An Act to authorise the making of schemes with respect to the development and planning of land whether urban or rural," an expression used in section 11, subsection (1) (b), "proper planning or development," as describing the purpose in view, but we think that he rather overrates the effect of this expression, for the paragraph in question only refers to the suspension of any provision in any statute, order, by-law or regulation similar to, or inconsistent with, any provisions in a scheme, and thus it is not an operative paragraph as regards the powers conferred by the Act, and statutes which interfere with private rights and raise questions of compensation are very strictly construed (Central Control Board (Liquor Traffic) *v.* Cannon Brewery, 1919, A.C. 744).

But as regards an enlarged interpretation of the Act, one of the most interesting portions of Sir Leslie's introduction is that in which he discusses the question whether agricultural land can be included in zoning schemes, and he points out with great force that too often the effect of ill-ordered, wasteful and sporadic building upon agricultural land is overlooked, and that to treat highly cultivated agricultural land as "undeveloped" is a mistaken idea.

In section 53, "Development" in relation to any land includes "any building or rebuilding operations and any use of the land or any building thereon for a purpose which is different from the purpose for which the land or building was last being used"; but there is a proviso to this, that the use of land for the purpose of agriculture, whether as arable, meadow, pasture ground or orchard and plantation, sale of underwood, etc., and the use for any of these purposes of any building occupied together with land so used, shall not be deemed to be a development of that land or building. Sir Leslie considers the material sections of the Act relating to this question, and comes to the conclusion that it permits almost complete zoning to be achieved with due regard to agriculture as well as industry and amenities.

This volume appears to us to afford a useful guide in brief to the subjects it deals with, and it may further prove of service to those requiring to make research in greater detail, as in a small compass it directs attention to all the necessary statutes, orders, and regulations. It also contains tables of cases and statutes and an index.

* "Outlines of the Law of Housing and Planning, including Public Health, Highways, and the Acquisition of Land." By John J. Clarke, M.A., F.S.S., of Gray's Inn and the Northern Circuit, Barrister-at-Law. With an Introduction by the Rt. Hon. Sir Leslie Scott, K.C. London: Sir Isaac Pitman & Sons. Price 7s. 6d. net.

TRADE NEWS

An Appointment.

Mr. G. N. Guest, late managing director of Hollings and Guest, hydraulic engineers, and John Hands and Sons, power press manufacturers, with many of his staff, has now joined Messrs. Tangyes, Ltd., Cornwall Works, Birmingham, who will be glad to quote for all types of hydraulic machinery and power presses.

Estate for Sale.

"Sunnyfields," Mill Hill, a freehold estate of 12 acres, is to be offered by auction by Messrs. Knight, Frank and Rutley in April next. The property is situated close to the shopping centre and five minutes by car from Mill Hill Station, L.M. and S. Railway main line. It has frontage to Lawrence-street of 642 ft., with all services available.

Rubber Flooring.

The equivalent of nearly 1½ miles of Dunlop rubber flooring, 36 in. in width, have been ordered by Messrs. Baker, Perkins, Ltd., of Westwood Park Works, Peterborough, to be laid in the new wing of the office building at Peterborough. In all, five floors are to be covered with rubber flooring.

Flags and Banners.

The use of flags can, on certain occasions, help in no inconsiderable way to bring movement and colour to our somewhat drab English streets. A catalogue, issued by Messrs. Ernest W. Perrett, Ltd., from 68, East India Dock-road, E.14, illustrates in colour many examples of "Excelsior" flags and banners. These are warranted to stand reasonable wear and tear. An especial feature is made by this firm of church banners, which can be executed to architects' designs.

Woodwork by Machinery.

Messrs. R. Cattle, Ltd., inform us that they have built a new works more capable of dealing with their steadily increasing volume of business. Their new address is:—Everitt-road, Chase-road, North Acton, N.W.10. Telephone Nos.: Willesden 1772 (3 lines). These works are only five miles from Marble Arch. The advantages gained are: (*a*) A modern ground-floor factory of 20,000 square feet, built to special requirements; (*b*) sufficient spare ground for extensions; (*c*) plant brought entirely up to date and laid down scientifically with a view to the utmost economy and efficiency of production.

Commercial Vehicles.

Morris Commercial Cars, Ltd., of Adderley Park, Birmingham, have constructed an entirely new range of amply-powered six-cylinder vehicles, which comprise 30-cwt., two-ton and three-ton models. Production of these vehicles commenced on March 1. One of the most important features is that both normal and forward control types are offered in the 30-cwt. and two-ton short-wheelbase models. The manufacturers envisage that the trend of operator opinion is likely to gravitate towards the forward control models in view of the numerous advantages this class of vehicle offers. With an eye to impending legislation the firm have produced a genuine three-tonner having an unladen weight of less than 50 cwt., which accordingly possesses the distinct advantage of being able to operate at the maximum permitted speed.

"Conversion and Construction."

Something out of the ordinary in trade catalogues has come to our notice. Messrs. Young and Marten, Ltd., the wholesale builders' merchants, of Caledonian Works, Stratford, E.15, have issued this brochure primarily to draw attention to the extension of their head establishment premises, which is now in progress, but they have not rested there. Taking a cue from their own needs, they give illustrations of a number of schemes for profitable conversion. These have been got out by a Fellow, R.I.B.A., and include:—New fireplaces for old; conversion of old cottages for present-day needs; alteration of a façade and shop front, etc. In some cases plans and sections are given, and there is a small chapter given to finance. In view of the arrangements made by certain of the building societies to advance money for desirable alterations, architects and builders may justifiably expect that a certain amount of work of this description may shortly follow. In such, this brochure—which will be sent upon enclosure of a business card—should be very useful.

Rust Prevention.

When considering the protection of iron and steel from rust and corrosion, protective coatings of paints, varnishes and the like may suffer from many disadvantages, as some are prone to be easily damaged and often require frequent renewal. This means large cost for paint and, especially, labour, for the reason that before the actual repainting can begin a good deal of preparatory work is imperative. One of the most successful methods of protecting iron and steel from rust and corrosion is by a coating of zinc (spelter), *i.e.*, galvanising. This term is usually understood to apply to the "hot" galvanising process, in which the articles to be treated are immersed in a bath of molten zinc, and is totally distinct from the electro-galvanic method, in which a thin coating of zinc is deposited by the action of an electric current. The zinc coating becomes definitely alloyed with the surface of the iron, and Messrs. G. A. Harvey and Co. (London), Ltd., of Greenwich Metal Works, S.E.7, who specialise in this process, inform us that this coating is composite in character and really consists of several layers merging one into the other so that there is no really sharp boundary between the iron surface underneath and the pure zinc above.

"Winstone House," Clerkenwell.

In connection with this building, which we illustrated in our issue for March 3, there were some interesting features of construction, as, for instance, in the foundation tank, which involved 8,000 cube yards of excavation and the underpinning of adjoining buildings. The stanchion foundations were in all cases taken down to the London clay. The whole of the tank is completely enveloped with a coating of asphalte, which was laid on a 3-in. layer of mass concrete under the floors and carried up to the full height of the reinforced concrete walls. In the factory building, the ground floor, first and second floors are of reinforced concrete construction, while the roof was constructed as a hollow-tile floor, in order to avoid condensation on the third floor ceiling. The existing buildings at 150-152, Clerkenwell-road, are connected at each floor level with the new building by a reinforced concrete bridge. The existing foundations were found not to be on good ground, and it became necessary to underpin part of the buildings. The two houses were united and the party wall pierced from top to bottom by a wide door opening at each floor. The existing timber floors were then picked up, a reinforced concrete framework extending from the London clay to the roof. Messrs. Peter Lind and Co., Ltd., 2, Central-buildings, S.W.1, were responsible for the design and execution of these works, in conjunction with varying sub-contractors. The architect was Mr. C. Stanley Peach, F.R.I.B.A.

NEW BUILDINGS IN LONDON

Barking.—FLATS.—A contract, value £3,395, has been placed with Mr. L. F. Richardson, of Streatham, for the erection of a block of flats in Longridge-road, Barking. Plans were prepared by Mr. Edgar R. Taylor, A.R.I.B.A., 5, Manchester-square, W.1.

Barnes.—SWIMMING BATH.—The Barnes Borough Council is to have plans prepared by the Borough Surveyor providing for a swimming bath, Solarium, tea-house, etc., on a site at Palewell Fields, estimated to cost £10,570.

Barnes.—FLATS.—Messrs. E. H. Wale, Ltd., builders, Court-drive, Hillingdon, are to erect 47 flats at Grove-road and Terrace-gardens.

Battersea.—HOUSING.—The B.C. have considered as to the development of the site at the corner of Hope-street and York-road. The site will accommodate two blocks of flats and the Council has recommended that the Borough Surveyor proceed with the preparation of detailed plans and specification, and Mr. E. C. Harris, F.S.I., 3, Bedford-square, W.C.1, be engaged to prepare the bills of quantities.

Clapham.—FLATS AND GARAGES.—The Bell Property Trust, Ltd., is to erect 32 flats with garages at 115, King's-avenue, Clapham.

Croydon. — HOUSES. — Messrs. Martin and Saunders, Auckland-road, S.E.19, are to erect 12 houses in Cypress-road and 16 houses in Sunset-gardens.—Messrs. Gower Builders (London), Ltd., West-way, Croydon, propose the erection of 17 houses with garage in Devonshire-way.—Mr. J. H. Martin, 17, Grant-road, Croydon, is to erect 20 houses in Howard-road and Woodside-green.—Fifty-five houses in Michael-road are proposed by Mr. P. Richardson, 139, Wickham-road, Croydon.

Curzon-street.—FLATS.—The large mansion known as Sunderland House has been acquired by Mr. Arundel Clarke for conversion into high-class flats. The work will be carried out by Messrs. Arundel Clarke, Ltd., 13, Bruton-street, W.1, to their own designs.

Ealing.—BANK.—Messrs. Lloyds Bank are extending their premises in The Broadway, Ealing, taking in adjoining building. Plans have been prepared in the architect's department at the head office of the Bank, and the contractor is Mr. Charles R. Price, of 107, Bishopsgate, E.C.2.

Ealing.—FLATS.—Messrs. B. Smith and Son (Builders), Ltd., estate office, Halsbury road West, Northolt, are to erect two blocks of flats, 16 houses and two garages in Twyford-avenue, to their own plans.

Ealing.—FLATS.—Mr. G. P. Bath, 46, Lincoln's Inn Fields, W.C.2, has prepared plans for a block of 24 flats on a site at Gunnersbury-avenue and Tudor-way, for Mr. J. H. Jenner.

Ealing.—FACTORY.—Messrs. Percy Bilton, Ltd., 113, Park-street, W.1, have submitted plans to the Ealing T.C. for a factory to be erected in Wadsworth-road, for Mr. R. Warburton. Messrs. Commercial Structures, Ltd., 38, Canal-road, N.1, are carrying out the contract.

Ealing. — HOSPITAL. — Messrs. F. Hall-Jones and Partners, Haven House, W.5, have prepared plans for alterations and additions at King Edward Memorial Hospital, in Mattock-lane. No contract has been placed as yet, but plans have been approved by the Ealing T.C.

East Greenwich.—HOUSING SCHEME.—The Greenwich Borough Council is to purchase land at the junction of Blackwall-lane and Azof-street for the erection of 16 flats in a four-story block.

Edmonton.—FACTORY.—A large site in Rosebery-road, Silver-street, N., has been acquired for the erection of a factory and offices. The contractors are Messrs. Prestige and Co., Ltd., Grosvenor-road, S.W.1. The architects are Messrs. Richard Ellis and Son, 37, Fenchurch-street, E.C.3.

Elephant and Castle.—DAIRY.—Premises at Nos. 53-54, London-road, S.E., have been acquired by the Express Dairy Co., Ltd., Tavistock-place, W.C.1, for reconstruction and fitting up as a branch dairy and restaurant. The plans have been prepared by Mr. S. N. Smallwood, whilst the contract has been placed with Messrs. H. and J. Taylor, Canada House, Hither Green-lane, S.E.13.

Finchley-road. — ADDITIONS. — Plans have been prepared by Mr. John C. S. Soutar, F.R.I.B.A., Wyldes, North End, Hampstead, N.W.11, for alterations and additions to Arcade House, N.W.11.

Fulham Palace-road. — PUBLIC-HOUSE. — The "Duke of Cornwall" public-house, in Fulham Palace-road, is to be rebuilt for Messrs. Watney, Combe and Reid, Stag Brewery, S.W.1, to plans by Messrs. F. J. Fisher and Son, 35, John-street, Bedford-row, W.C.1. Tenders are now in, and a decision will shortly be made.

Green-lanes.—SHOPS.—Messrs. Dowton and Company, chartered architects, 125, Pall Mall, S.W.1, have prepared plans providing for shops and flats on corners of Green-lanes and Seven Sisters-road. No contract has been placed, as the scheme is at an early stage.

Hackney. — CONVENIENCE. — The lowest tender submitted for the erection of a proposed convenience at 368, Wick-road, was that of Messrs. J. and R. Thompson (London), Ltd., Springfield Works, Horn-lane, Acton, W.3, whose price is £1,289. The Hackney B.C. is recommended to accept.

Harrow-road.—SHOP REBUILDING.—Messrs. Montague Burton, Ltd., tailors, propose to rebuild 480-482, Harrow-road, at the corner of Fernhead-road. Plans have been prepared at their head office, Hunslet, Leeds.

Hither Green.—DEPOT.—A further contract has now been placed in connection with the large locomotive depot to be built for the Southern Railway. This is for the engine sheds and office building, the contractors being Messrs. J. W. Ellingham, Ltd., Spital-street, Dartford, Kent. Work will start shortly, under the direction of the company's chief engineer, whose offices are at Waterloo Station, S.E.1.

Islington.—HOUSING.—The B.C. is to purchase a site in Sebbon-street for housing purposes.

Kensington.—ADAPTATION.—The L.C.C. has recommended £6,375 in respect of the adaptation as a nurses' home of part of block K of the institution at St. Mary Abbot's Hospital, Marloes-road, W.8.

Kentish Town.—FLATS.—The St. Pancras B.C. has recommended for the erection of working-class dwellings, comprising 64 flats, in Leighton-road at its junction with Lady Margaret-road, Kentish Town, the estimate of £29,397 submitted by Messrs. Gee, Walker and Slater, Ltd., 32, St. James's-street, S.W.1.

Leytonstone.—LIBRARY, ETC.—The Leyton T.C. proposes the erection of shops, a public library and offices at the corner of Church-lane and High-road, to plans by Mr. J. A. Dartnell, 11, Dowgate-hill, Cannon-street, E.C.4. Tenders are now being invited.

Millbank.—HOSPITAL.—The Governers of the Westminster Hospital are considering the concentration of hospital's services in a new building that would be erected upon a site in Millbank, bounded by Page-street, Marsham-street and St. John's-gardens. The hospital's surveyor is Mr. H. Warwick Daw, F.S.I., 100c, Queen Victoria-street, S.W.1, while the consulting architects to the hospital are Messrs. Adams, Holden and Pearson, FF.R.I.B.A., 9, Knightsbridge, S.W.1.

Mortlake.—FLATS.—The Barnes B.C. has decided to erect approximately 150 flats at a site in the Lower Richmond-road, on the east side of the Chertsey-road. The plans are to be prepared by the Borough Surveyor, who is also to prepare plans for a block of dwellings on a site at Ashleigh- and Avondale-roads, Mortlake, for slum-clearance purposes.

Paddington.—TENEMENTS.—The Paddington B.C. have accepted a tender submitted by Messrs. C. Taverner and Son, 112, Finchley-street, N.W.3, for the erection of a block of flats in Brindley-street, W.2. The price was £3,348.

Paddington.—BUILDING.—Messrs. Marshall and Tweedy, FF.R.I.B.A., 4, Cavendish-place, W.1, are the architects for the rebuilding of 29-34 (inclusive), Spring-street, Paddington. The building contract is not yet settled.

Peckham.—SHOWROOMS AND SHOP.—Messrs. Henry Kent (Builders), Ltd., 31, Beacon-road, S.E.13, have obtained a contract at £1,700 for the erection of a shop and showrooms in Rye-lane. Mr. Edgar R. Taylor, A.R.I.B.A., 5, Manchester-square, W.1, has prepared the plans.

Perivale.—GARAGE.—Messrs. Lee and Lee, 94, High-road, Wembley, are architects for a garage to be erected adjoining the filling station in Western-avenue, for Mr. W. Smyth. No contract arrangements have been made as yet.

Shaftesbury-avenue.—REBUILDING.—Messrs. W. Frost and Sons, Ltd., are to purchase the freehold of Nos. 152-156 (even) in connection with the proposed rebuilding of the company's premises in Little Earl-street, W.C.2.

Sheen.—SHOPS AND FLATS.—Messrs. Holliday and Greenwood, Ltd., 11, Buckingham Palace-gardens, S.W.1, are to erect, as building owners, a block of six shops with residences over at 410-420, Upper Richmond-road, S.W.14.

Sheen.—FLATS.—A block of 104 flats is proposed by Mr. Frank Mousley, Derby-road, S.W.14, on the Wilderness estate, at Upper Richmond-road and Derby-road. A start will be made with 12 flats. Plans have been prepared by Messrs. Meakin, Archer and Co., architects and surveyors, 73, King William-street, E.C.4. No contract has been placed.

Sidcup.—HOUSES.—The U.D.C. have provisionally approved the plans for new Ideal Homesteads, Ltd., "Ideal House," Carlton-road, Erith, providing for 56 houses in Hurst-road, 531 houses on Oaklands Park estate, and 712 on Longlands Park estate, Sidcup.

Stoke Newington.—HOUSES.—Mr. Stanley Hunt, A.R.I.B.A., 101, Finsbury-pavement, E.C.2, has prepared plans for four houses to be erected at Bethnal-road and Woodberry Down.

Stoke Newington.—SHOPS.—Messrs. J. R. Cordell and Sons, builders, 44, London-road, E.5, are erecting new shop premises at 228, Stoke Newington High-street, E.5, for Messrs. Yates and Sons, 58, London-road, E.5.

Stoke Newington.—HOUSING.—The Corporation are negotiating the sale, through Messrs. J. Crosby and Co., Ltd., surveyors, 234, Bishopsgate, E.C.2, of Nos. 1-4, Glebe-place. Houses are to be erected.

Streatham.—SCHOOL.—A new elementary school for 400 children on the Leigham Court-road site is to be erected for the L.C.C. The building contract has been placed with Messrs. J. W. Ellingham, Ltd., Spital-street, Dartford, at £12,762.

Streatham.—SHOPS.—Messrs. Geo. Parker and Sons, Ltd., 124, Sumner-road, S.E.15, are builders for nine shops to be erected on east side of Streatham High-road, and Hopton-road, Streatham.

Westbourne-grove. — FLATS. — Messrs. H. Shepherd and Thomerson, 80, Queen's-road, W.2, have prepared plans for the erection of flats at 7-27, Hatherley-grove, and 15-20, Westbourne Grove-terrace. No building contract has been placed.

Willesden. — EXTENSIONS. — The E.N.V. Engineering Co., Ltd., are to make large extensions to their works, etc., in Hythe-road, N.W. The contract has been placed with Messrs. Wilson, Lovatt and Co., Ltd., Abbey House, Victoria-street, S.W.1. The plans have been prepared by Mr. Henry C. Smart, F.R.I.B.A., 73a, Queen Victoria-street, E.C.4.

Wood Green.—ALTERATIONS.—Messrs. A. Edmonds and Co., Ltd., 18, Featherstone-buildings, High Holborn, W.C.1, are the successful contractors for the new shopfront and alterations for Messrs. Wallis and Co., 9, Cheapside, Wood Green. Work is being carried out to the designs of Mr. J. L. Cohen, A.R.I.B.A., 31, Essex-road, Chingford, E.4.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st FEBRUARY, 1933.

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.]

	Masons.	Brick-layers.	Car-penters Joiners.	Plas-terers.	Slaters.	Plumbers.	Painters.	Labourers.
Aberdare	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Accrington	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Aldershot	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Alfreton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Alnwick	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Altrincham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Ashford (Kent)	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Ashington	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Ashton-under-Lyne	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Aylsham	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Banbury	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Barnsley	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Barnstaple	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Barrow-in-Furness	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Barry	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Basingstoke	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Bath	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Bedford	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Berwick	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bexhill	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Birkenhead	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7½	1/2½
Birmingham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bishop Auckland	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Blackburn	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Blackpool	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bognor Regis	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Bolton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bournemouth	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Bradford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bradford-on-Avon	1/2	1/2	1/2	1/2	1/2	1/1	1/1	10½
Braintree	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Brentwood	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bridgwater	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Bridlington	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Brighton	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Bristol	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bromsgrove	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bromyard	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Bungay	1/1	1/1	1/1	1/1	1/1	1/1	1/1	9½
Burnley	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Burton-on-Trent	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bury	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bury St. Edmunds	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Buxton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cambridge	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Canterbury	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Cardiff	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Carlisle	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Chatham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Chelmsford	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Cheltenham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Chester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Chesterfield	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Chorley	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cirencester	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	1/1½	11
Clacton	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Colchester	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Coventry	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cranbrook	1/1	1/1	1/1	1/1	1/1	1/1	1/1	9½
Crewe	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Cromer	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Darlington	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Deal	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Denbigh	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Derby	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Devizes	1/2	1/2	1/2	1/2	1/2	1/2	1/1	10½
Dewsbury	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Doncaster	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Dorchester	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	1/1½	11
Dorking	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Dovercourt	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Driffield	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Droitwich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Dudley	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Durham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Eastbourne	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
E.Glam. (Mon. Val.)	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Ely	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Exeter	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Exmouth	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Fakenham	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Felixstowe	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Folkestone	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Frome	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	11
Glossop	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Gloucester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Godalming	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Goole	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Gosport	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Grantham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Gr. Yarmouth	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Grimsby	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Guildford	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Halifax	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Harpenden	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Harrogate	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Hartlepools	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Harwich	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Hastings	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Hatfield	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Hednesford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hereford	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½	11½
Herne Bay	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Hertford	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Hitchin	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Hoddesdon	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Holt	1/1	1/1	1/1	1/1	1/1	1/1	1/1	9½
Huddersfield	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Hull	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Hunstanton	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Huntingdon	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Isle of Wight	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Ipswich	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Keighley	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Kettering	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Kidderminster	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
King's Lynn	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Lancaster	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Leamington	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Leeds	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Leicester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Leighton Buzzard	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Lichfield	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Lincoln	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Littlehampton	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Liverpool	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7½	1/2½
Llandudno	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Llanelly	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
London—								
12 m. radius	1/7	1/7	1/7	*	1/7	1/7	1/6	1/2½
12-15 m. radius	1/6½	1/6½	1/6½	*	1/6½	1/6½	1/5½	1/2
Loughborough	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Lowestoft	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Luton	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Macclesfield	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Maidstone	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Malvern	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Manchester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Mansfield	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Margate	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Market Harborough	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Matlock	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Melton Constable	1/1	1/1	1/1	1/1	1/1	1/1	1/1	9½
Melton Mowbray	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Merthyr Tydfil	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Middlesbrough	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Newark	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newbury	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Newcastle-on-Tyne	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Newcastle-u.-Lyme	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
New Forest	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Newmarket	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Newport, Mon.	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Northampton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Norwich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Nottingham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Nuneaton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Oakham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Oldham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Oxford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Paignton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Peterborough	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Plymouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Pontypridd	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Portsmouth	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Preston	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Ramsgate	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Reading	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Redcar	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Redditch	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Reigate	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Retford	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Ripon	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Rochdale	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Rochester	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Rugby	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Saffron Walden	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
St. Albans	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
St. Helens	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Sawbridgeworth	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Saxmundham	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
Scarborough	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Sevenoaks	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Sheffield	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Shrewsbury	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Sittingbourne	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Southampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Southend-on-Sea	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Southport	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
South Shields	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Stevenage	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Stockport	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Stockton-on-Tees	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Stoke-on Trent	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Stourbridge	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Stourport	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Stowmarket	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Stratford-on-Avon	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Stroud	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Sunderland	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Swaffham	1/1	1/1	1/1	1/1	1/1	1/1	1/1	9½
Swansea	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Swindon	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/-
Tamworth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Taunton	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Thetford	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Torquay	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Totnes	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3	11½
Trowbridge	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	11
Tunbridge Wells	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Uttoxeter	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Wakefield	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Walsall	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Walsden	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Warminster	1/2	1/2	1/2	1/2	1/2	1/2	1/1	10½
Warrington	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Warwick	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wells (Norfolk)	1/1	1/1	1/1	1/1	1/1	1/1	1/1	9½
Welwyn Gar. City	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
West Bromwich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Weston-super-Mare	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Weymouth	1/3	1/3	1/3	1/3	1/3	1/3	1/2	11½
Whitby	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Wigan	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Winchester	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Windsor	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Wisbech	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Wolverhampton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Woodbridge	1/2	1/2	1/2	1/2	1/2	1/2	1/2	10½
Worcester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Worksop	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Worthing	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11
Wrexham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wycombe	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/-
Wymondham	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	10½
York	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½

* The rate recognised by the National Association of Operative Plasterers as and from 1st February, 1933, is 1/7½ per hour.

For Building Trade wages in Scotland, see page 518.

ELECTRICAL PROGRESS

A LUNCHEON was held on Friday last at the Savoy Hotel by the Electricity Development Association, with Lord Meston in the chair. Amongst those present were Sir Felix Pole, Lord Ashfield (president-elect), Sir Hugo Hirst, Sir Jas. Devonshire, Sir Douglas Newton, M.P., Lord Barnby, Lord Wargrave, Colonel R. E. Crompton, Sir Holberry Mensforth, Sir John Brooke, Messrs. R. P. Sloan, Frank Hodges, T P. Wilmshurst, C. D. Taite, R. G. Rawkins, R. Huntsman, Sir Lawrence Halsey, and Alderman J. W. Longley.

Mr. Oliver Stanley, M.P., Minister of Transport, proposing "The Electricity Development Association," said that while in 1922 the sale of electricity was 3,650,000,000 units, in 1933 it was 10,000,000,000 units. Before very long they hoped to see the completion of that great experiment in national planning—the "Grid." When that was completed, and the Board's endeavours were transferred from construction to distribution, before long the public would begin to ask that what they had hitherto only seen in the shape of pylons should be interpreted into something they could understand and appreciate. By bringing cheap and efficient methods into the homes of the less well-to-do they could do a great deal to make life easier and leisure more prolonged. By stimulating the manufacturing industries they could do much to relieve unemployment, and by bringing idle capital into great and useful work they would do something towards national rehabilitation.

Lord Meston, responding, said that the "Grid" could not have been started under worse national conditions, and they felt it was particularly incumbent upon them to do everything possible to help the authorities to get over these "teething troubles."

THE BUILDING TRADE

The latest of the dinner discussions on matters relating to the building industry, which Messrs. Pitchers, Ltd., the building contractors, have been holding during the winter for the benefit of their staff, was held on Tuesday, when a lecture on "The Building Trade in General" was given by Mr. Bernard Perks (general manager of *The Builder*). Mr. F. B. Pitcher occupied the chair, and the company included Messrs. Horace Pitcher, Frank Pitcher, Warren Neil, G. M. Hall, John Decker, Russell Jones, Cyril Sweet, Cecil Masey, Mr. Llewellyn, Mr. Griffin, Mr. Ward, Mr. A. C. J. Green, and Mr. Brittenden (of Caxton Floors, Ltd.).

The lecturer said that building was passing through a difficult time and the call today was for each and every one to do something towards helping the industry. Out of 850,000 operatives in the industry, 37 per cent., or over 300,000, were out of work, and many architects, surveyors and assistants also. Yet plenty of work lay ready to hand, in the form of slum clearance, housing, necessary municipal buildings, schools, etc., and there was no reason why such work should not be put in hand. We had the money and the men. The building industry could do much to help the situation. It could make every effort to lower still further building costs (the first step towards helping the investor to recover confidence); it must organise its various branches to present a united front in the form of real co-operation between architects, masters and men. Success could not come unless it were realised that the good of the industry as a whole was more important than the welfare of any single branch. Co-operative effort must be made, and that could only come from paying increased attention to technical education. And that applied to each and every member of the industry, from labourer to architect.

In concluding, the lecturer congratulated Messrs. Pitchers upon their plan of extending the knowledge of their staff by the series of discussions, and also upon their new name-board for display upon "the job." It was worthy of the work of the firm.

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issue. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in, the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; Surveyor, S.; Engineer, E.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, etc.

MARCH 27.

***Blackburn.**—Houses.—Borough Engineer's Office, Town Hall. Dep. £1.

MARCH 29.

Barrow-in-Furness.—Conveniences.—In Duke-st., for Corporation. B.E., Town Hall.

Blyth.—Houses.—For 200, at Plessey-rd., for T.C. L. Leeper, B.E., Municipal-bldgs. Dep. £5 5s.

Merton and Morden.—Building.—Public convenience at Morden recreation ground, steel framed buildings to house rolling stock, additions to pumping station, West Barnes-lane, and provision of centrifugal pump, motor, etc., at West Barnes sewage pumping station, for U.D.C. G. Jerram, E. and S. Dep. £1 each.

***Mold.**—Houses.—Clay-lane, for U.D.C. F. A. Roberts, architect, Earl-chambs. Dep. £3 3s.

Plymouth.—Telephone Exchange.—For the Commissioners, H.M.O.W. Room 65D, Third Floor, London, S.W.1. Dep. £1.

Shrewsbury.—Alterations and Additions.—To Head Post Office. For the Commissioners, H.M.O.W. Room 65D, Third Floor, London, S.W.1 Dep. £1 1s

Wellingborough.—Houses.—150, Priory-rd. housing site, for U.D.C. E. and S. Dep. £1 1s.

MARCH 30.

Bury.—Premises.—Block of business premises in Rock-st., for T.C. B.E., Bank-st.

Darlington.—Additions.—And alterations at Grammar School, for T.C. (*a*) Alterations to school, (*b*) alterations to heating systems, (*c*) new caretaker's house. E. Minors, B.S., Town Hall. Dep. £1 1s. (each contract).

Derby.—School.—For junior school at Sinfin, Derby, for T.C. C. H. Aslin, B. Architect, Gower-st., Derby. Dep. £1 1s.

Glasgow.—Houses.—Various trades for 24 houses on the Shawlands extension, for Corporation. D. Stenhouse, Town Clerk, City-chambs., Glasgow.

London.—Cottages.—29, and construction of approach rd. thereto, etc., at White Hart-lane estate, Tottenham, for L.C.C. Architect, County Hall, Westminster Bridge, S.E.1. Dep. £2.

MARCH 31.

Dagenham.—House.—Park Superintendent's house, at Central Park, for U.D.C. E. and S. Dep. £2 2s.

Galway.—School.—For erection of national school at Carrabeg, County Galway, for Commissioners of Public Works. T. Cassedy, Office of Public Works, Dublin. Dep. £1.

London.—Shops, etc.—For shops, public library and offices at Church-lane and High-rd., Leytonstone, for Leyton T.C. J. A. Dartnall, architect, 11, Dowgate-hill, E.C.4. Dep. £5 (notes).

Rochester.—Painting.—For painting the exterior of St. William's Hospital for Infectious Diseases, Rochester, for Rochester and Chatham Joint Hospital Board. C. W. W. Thompson, architect, Bank-chambs., Rochester.

Sowerby.—Repairs.—For pointing and general repairs at Sowerby Bolton Brow Council school, for W.R.C.C. H. E. Booth, Education Offices, Sowerby Bridge.

Teddington.—Extension.—To swimming bath, Vicarage-rd. F. E. Read, Clerk. Dep. £2 2s.

Wroot, etc.—Houses.—For 28 houses in various districts, for Isle of Axholme R.D.C. J. T. Battye, surveyor and inspector, High-st., Epworth. Dep. £2.

APRIL 1.

Bridlington.—Houses.—For 110 off South Back-lane, for T.C. Borough Architect's Office, Town Hall. Dep £3 3s.

Bristol.—Houses.—100 houses on Bedminster housing site, for T.C. H. M. Webb, B.Sc., City E. and S. Housing Department, 51, Prince-st. Dep. £1.

Buntingford.—Houses.—10 houses on site in Baldock-rd., Buntingford, Aspenden, for R.D.C. Ernest G. Thody, S. Dep. £2 2s.

Ennis, Co. Clare.—Houses.—6, for Irish Sailors' and Soldiers' Land Trust, 51, Upper Mount-st., Dublin. Dep. £3 3s.

Kent.—Building.—All building work in connection with remodelling of the Coxheath Institution, Maidstone, and all engineering services connected therewith, including steam and hot water heating, for C.C. W. H. Robinson, F.R.I.B.A., County Architect, Springfield, Maidstone. Dep. £5 5s.

APRIL 3.

Acton.—Alterations.—To engine-room at public baths, for T.C. W. G. Cross, B.E. Dep. £2.

Bebington and Bromborough.—Housing.—12 flats and 1 block of 2 semi-detached houses on land adjoining Mersey Bank housing estate, and fronting New Ferry-rd., New Ferry, for U.D.C. E. and S. Dep £2 2s.

Creeting St. Mary.—Houses.—14 in district, for Bosmere and Claydon R.D.C. R. C. Riches, building surveyor, Needham Market. Dep. £2.

Kettering.—Hot Water.—For installation of low-pressure hot water heating system and hot water supply apparatus at Kettering Post Office, for H.M.O.W. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Dep. £1.

Southend-on-Sea.—Convenience.—For men and women, on Southchurch-rd., and incidental works in connection therewith, for C.B. R. H. Dyer, B.E. and S. Dep. £2.

Sunbury-on-Thames.—Houses.—8, on land adjoining Halfway Cottages, Upper Halliford, for U.D.C. H. F. Coales, S. Dep. £2 2s.

Swallownest.—Painting.—For internal painting and decorating at the Swallownest Hospital, near Sheffield, for South Rotherham and Kiveton Park District Isolation Hospital Committee. A. H. Styring, clerk, 6, North Church-st., Sheffield.

West Mersea.—Houses.—4 at Dawes-lane, for U.D.C. E. F. Pressey, surveyor, Council Offices, West Mersea Dep. £1 1s.

APRIL 4.

Bootle.—Pavilion.—For (a) builders's work; (b) timber work, and (c) timber-framed buildings for golf pavilion, Litherland, for T.C. B.E., Town Hall, Bootle. Dep. £1 (for parts (a) and (b) each).

Clonakilty.—Houses.—16, at Fair Field-rd., for U.D.C. J. J. O'Crowley, Pearse-st. Dep. £5.

Dublin.—Lodge.—For erection of gate lodge to Longmeadows Park at St. Lawrence-rd., Chapelizod, Dublin, for Commissioners of Public Works. T. Cassedy, Office of Public Works, Dublin. Dep. £1.

Killester.—Painting.—For external painting to 42 cottages at Killester, Co. Dublin, for Irish sailors' and Soldiers' Land Trust, 50-51, Upper Mount-st., Dublin. Dep. £1 1s.

Sligo.—Cottages.—For erection of 42 labourers' cottages in Sligo County Health District, for County B. of H. and P.A. Nicholas O'Dwyer, B.E., M.I.C.E.I., Veritas House, Lower Abbey-st., Dublin, Consulting Engineer to Board. Plans from T. J. Conlon, Secretary to Board, Sligo.

APRIL 5.

Birmingham.—Houses.—For 63 non-parlour houses, Blakelands Farm estate, Perry Barr, and 42 non-parlour at Lower Tinkers Farm estate, for Corporation. H. H. Humphries, C.E. and S., Council House. Dep. £2 2s. (each contract).

APRIL 6.

Bispham.—Cottages.—For 4 at Monks-lane; 2, Downholland; 6, Heathey-lane; 10, North Meols; 10, Bridge-lane; 6, Tarleton, for West Lancs, R.D.C. R. Rosbotham, 52, Derby-st., Ormskirk. Dep. £2 2s.

Blaydon.—Painting.—For outside painting of 24 sets of county police stations and houses, for Durham C.C. County Surveyor's Office, 43, Old Elvet, Durham.

Dudley.—Painting.—For outside painting to 273 houses on the various housing estates belonging to Corporation. Housing Manager, Holloway-chambs., Priory-st., Dudley.

Kircubbin, etc.—Schools.—For new schools at Kircubbin and Portaferry, for Down County Regional E.C. Castor J. Love, architect, 5, Wellington-place, Belfast.

Liverpool.—Painting.—External painting of 5,999 houses and dwellings on various estates, for T.C. Housing Department, Municipal Annexe.

Wanstead.—Painting.—At housing site at Rodney-rd., Wanstead, for U.D.C. Council Offices, Surveyor's Department.

APRIL 7.

Grimsby.—Building.—For three story ferro-concrete building on pile foundations, for T.C. S. R. Windle, Borough Electrical Engineer, Electricity Works, Moss-rd., Grimsby. Dep. £3 3s.

APRIL 8.

Oldham.—Electric Light Installation.—And ironmongery, at Abbey Hills housing estate (386 houses), for C.B. Borough Engineer and Surveyor, Town Hall, Oldham. Dep. £1 1s.

***Parson Drove.**—School.—Erection of. R. D. Robson, County Architect, County Hall, March. Dep. £3 3s.

APRIL 10.

Glasgow.—Painting.—At St. Aloysius' (Springburn) School Annexe, Elmvale-st., Glasgow, N., for the Education Department. Education Offices (Property Department), 129, Bath-t., Glasgow, C.2. Dep. £1 1s.

Haywards Heath.—Building Work.—Extensions to the boiler-house and heater chamber, etc., at the Brighton County Borough Mental Hospital, Haywards Heath, Sussex, for the Visiting Committee. J. H. Rothwell, clerk, Town Hall, Brighton. Dep. £2 2s.

Hendon, N.W.4.—School.—For the B.C. Chairman, Education Committee, Town Hall. Dep. £4 4s.

***Kingsbury (N.W.9).**—Public Convenience.—For the U.D.C. Clerk, Council Offices. Dep. £2 2s.

St. Asaph (Flint).—Council Offices.—And board room on the Upper Denbigh-rd., St. Asaph, for R.D.C. E. O. Evans, Hafod Elwy, St. Asaph. Dep. £3 3s.

Wednesbury.—Houses.—172 non-parlour type on Park-lane and Myvod-rd. site, for T.C. A. Booth, L.R.I.B.A., B.E. and S. Dep. £2 2s.

APRIL 11.

Kew.—Painting.—For external painting of the building at the Board's Works, West Hall-rd., Kew Gardens, for the Richmond Main Sewerage Board. W. Merrick, clerk, 39, George-st., Richmond, Surrey.

APRIL 12.

Welwyn.—Houses.—12, at Woolmer Green housing scheme, and construction of new road, water main, etc. Surveyor to Council, C. B. Borthwick, Council Offices, Welwyn, Herts. Dep. £2 2s.

APRIL 15.

Inverness.—Houses.—For 24 two-roomed houses in six blocks of four each, for the T.C. A. F. MacKenzie, architect, Town House, Inverness.

Wells.—Rebuilding.—A portion of the Town Hall, etc., for the Corporation. E. P. Foster, Town Clerk, 1, Cathedral Green, Wells, Somerset. Dep. £3 3s.

APRIL 17.

Newport Pagnell.—Houses.—12, for R.D.C. Thomas Castles, Surveyor, Council Offices, 7, Station-rd., Newport Pagnell. Dep. £2 2s.

APRIL 19.

Doncaster.—Warehouse.—For (*a*) Warehouse, offices, etc; (*b*) provision of sheet steel piling, for wharf wall; (*c*) diversion of river, for Corporation. R. E. Ford, Estates Surveyor, 3, Priory-place. Dep. £5.

NO DATE.

Ballachulish.—Houses.—For 60 houses in various districts, for Argyllshire C.C. County Engineer, Lochgilphead. Dep. £1 1s.

Baschurch.—Alterations.—For repairs, etc., to farm houses and buildings, at (*a*) Marion Grange Farm, and (*b*) Shrawardine Farm, for C.C. County Land Agent, 5, Belmont, Shrewsbury.

Ely.—Painting.—For the external painting of 104 houses in various parishes, for the Ely R.D.C. F. W. Green, clerk, Rural Council Offices, Ely.

Ramsgate.—Bathing Pool.—At the St. Laurence Cliffs, for T.C. H. G. Curtis, Town Clerk.

Romford.—New Ward, etc.—For erection of a new ward, alterations to heating system and a new mortuary. W. Evans, Western Chambers, Romford. (Local contractors only.)

Sidbury, Devon.—Repairs.—Of Sidbury Vicarage. Vicar, Sidbury, Sidmouth.

Walsall.—Painting, etc.—At the Walsall General Hospital, for the Committee. W. Francombe, House Governor.

Westbourne.—Alterations.—And new drainage, at "Drounces," Westbourne, for Mr. J. W. Loader Cooper. J. Anty, architect, 44, South-st., Chichester.

MATERIALS, etc.

MARCH 29.

Hemsworth.—Builders' Materials.—For R.D.C W. T. Lynam, A.M.I.C.E., E.

MARCH 30.

Holywood.—Tar.—And other materials, for U.D.C. Town Surveyor.

MARCH 31.

Abertillery.—Macadam.—For the U.D.C. D. R. Davies, clerk, Council Offices, Abertillery, Mon.

Hazel Grove and Bramhall.—Stone, etc.—For U.D.C. Surveyor, Council Offices, Hazel Grove.

Southampton.—Broken Granite, etc.—For C.B. B.E.

APRIL 1.

Chorley.—Road Materials.—For T.C. B.S., Town Hall.

Ramsey.—Limestone.—And other materials, for U.D.C. R. F. Sergeant, clerk, Ramsey, Huntingdon.

APRIL 4.

Elham.—Broken Granite.—For R.D.C. A. E. Price, S., Lyminge, Kent.

APRIL 6.

London.—Materials.—For Great Western Railway. F. R. E. Davis, Secretary, Paddington Station. W.2.

APRIL 12.

Swanscombe.—Supplies.—For U.D.C. Surveyor, L. E. Croucher, Council Offices.

APRIL 20.

Cairo.—Cement.—For 600 tons Portland cement, for Main Drainage Department. Inspecting Engineer, to the Egyptian Government, 41, Tothill-st., S.W.1. Payment 100 mills.

ENGINEERING, IRON AND STEEL.

MARCH 29

Gutsley.—Sewers.—970 yds. of 9-in. stoneware and approximately 260 yds. of cast iron pipe sewers and manholes; also include construction of receiving tank and pump house, for U.D.C. E. Stockdale, E. and S. Dep. £2 2s.

MARCH 31.

Coleraine.—Reservoir.—Storage reservoir, for Coleraine T.C. and Portstewart R.D.C. J. E. Croasdaile, E., Avenue-chambers, Belfast. Dep. £1 1s.

APRIL 10.

Abertillery.—Retaining Wall.—At Victoria-rd., Six Bells, for U.D.C. Surveyor, King-st. Dep. £5.

Haywards Heath.—Heating.—Extensive apparatus for warming and supply of hot water and steam to main buildings of Mental Hospital, for Brighton C.B. A. H. Barker, consulting engineer, 100, Victoria-st., Westminster, S.W.1. Dep. £5 5s

APRIL 20.

Johannesburg.—Conductors.—For 20 miles of 19.083 and 10 miles of 37.083 black double-braided cable with copper conductors, for City Council. Dept., Overseas Trade, 35, Old Queen-street, S.W.1. (Ref. A.X. 11730).

Johannesburg.—Transformer Plant.—The 1,000 k.w. 3-phase A. to D. current converter, for Johannesburg C.C. Dept. C., Overseas Trade, Old Queen-street, S.W.1. (Ref. A.X. 11727).

APRIL 21.

Durban.—Cable.—Supply of lead covered, paper insulated telephone cable, for Durban Municipality. Dept., Overseas Trade, Old Queen-street, S.W.1. (Ref. A.X. 11726).

Durban.—Cable.—5¾ miles lead covered telephone cable, for Durban Municipality. Dept., Overseas Trade, Old Queen-street, S.W.1. (Ref. A.X. 11728).

ROAD, SEWERAGE AND WATER WORKS.

MARCH 29.

Edinburgh.—New Road.—For roads and sewers at Gorgie, for T.C. B.E., 14, Cockburn-st., Edinburgh.

Guiseley.—Sewers.—For 970 yds. 9 in. stoneware and 260 yds. cast-iron sewers, for U.D.C. E. Stockdale, B.E., Town Hall. Dep. £2 2s.

Stockport.—Pipes.—Valves, pipes, ironwork, etc., in connection with Fernilee reservoir, for T.C. G. H. Hill & Sons (Manchester), 40, Kennedy-st., Manchester. Dep. £3 3s.

Thornaby.—Making-up.—For the making-up of six roads, for the T.C. H. Kay, B.E. & S., Town Hall, Thornaby-on-Tees. Dep. 10s. 6d. (each road).

Wharfedale.—Mains.—1,700 lin. yds. water mains at Menston, for R.D.C. H. Riding, Waterworks Engineer.

MARCH 31.

Cheshire.—Roads.—Road diversion at Bunker's Hill on Hazel-grove-Romily-rd., Bredbury and Romily, for C.C. G. E. Ashforth, C.S., The Castle, Chester. Dep. £5 5s.

APRIL 1.

Kingston-upon-Thames.—Sewerage.—6,150 ft. lin. of 9 in. dia. stoneware pipe sewer with manholes and appurtenant works, at Park-rd., for T.C. G. L. Paling, B.S. Dep. £2 2s.

APRIL 3.

South Molton.—Roadworks.—For the surface dressing of approximately 60,000 super yds. of highways, for the Council. Harold Settle, B.S., Municipal Offices, 1, East-street, South Molton.

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APRIL 5.

Dunfermline.—Piping.—1,500 yds. of concrete piping in Tower Burn Valley, for T.C. D. H. Shaw, B.E., City Chambers. Dep. £2 2s.

Hove.—Making-up.—Of Elm-drive, for T.C. T. R. Humble, B.S.

Mansfield.—Sewers.—For concrete tube sewers, detritus, etc., tanks, etc., at sewage works, for T.C. W. Thompson, B.E. & S., Carr Bank, Mansfield. Dep. £2 2s.

Wembley.—Making-up.—Of part of Windermere-av., under Cattle Creep railway bridge, Kenton, approx. 143 yds. in length, for U.D.C. C. R. W. Chapman, E. and S. Dep. £2 2s.

APRIL 6.

Bexleyheath.—Making-up.—For the making-up of Shakespeare-rd., and Kipling-rd., Bexleyheath, for the Bexley U.D.C. Surveyor, Council Offices, Bexleyheath. Dep. £2 2s.

Nottingham.—Drainage.—600 yds. of brick sewers, 6 ft. and 5 ft. dia., together with various chambers and other appurtenant works, at Leen Valley, for T.C. T. Wallis Gordon, City E. and S. Dep. £2.

APRIL 10.

Prestatyn.—Making-up.—Of seven roads, for U.D.C. S. T. Roberts, S. Dep. £2 2s.

NO DATE.

Rawmarsh.—Street Improvement Works.—For the making-up of Osberton-street, Morley-street, Foljambe-street and Nodder-street, for U.D.C. Jeffrey A. Tonge, M.Inst.M.&Cy.E., Council Offices, Parkgate, Yorkshire, W.R. Dep. 10s. (each street).

NEW COMPANIES

The particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery-lane, W.C.2, from the documents available at the Companies' Registry.

J. W. Sandall, Ltd. (273,649). Registered March 6. Builders and contractors. At 18, Hermitage-street, Sheffield. Nominal capital, £1,000.

Birkenhead Sanitary Supplies, Ltd. (273,567). Registered March 3. 1a, Grosvenor-road, Birkenhead. Builders' and decorators' merchants, etc. Nominal capital, £1,000.

Suburban Developments (Manchester), (273,622). Registered March 4. 1, Cooper-street, Manchester. Builders, contractors, etc. Nominal capital, £1,000.

Albert Locke, Ltd. (273,519). Registered March 2. Builders and contractors. Nominal capital, £2,000. A. Locke, Mallowhide, Crofts Bank-road, Davyhulme, Lancs.

Wisbech Estates, Ltd. (273,512). Registered March 1. Builders, builders' merchants, etc. Nominal capital, £4,000. H. Frost, 28, Elm-road, Wisbech.

Barham & Perry, Ltd. (273,477). Registered March 1. 14, Artillery-row, Westminster, S.W.1. Builders, contractors, etc. Nominal capital, £2,000.

Heald Green Estates, Ltd. (273,490). Registered March 1. Builders and building contractors, etc. Nominal capital, £500. T. J. Jones, "Aysgarth," The Avenue, Ashton-on-Mersey.

Sunshine Homes, Ltd. (273,689). Registered March 7. 10, Grange-parade, Hayes. Builders and contractors, etc. Nominal capital, £3,000.

Improved Homes, Ltd. (273,710). Registered March 8. Constructors or improvers of dwelling-houses, etc. Nominal capital, £100. P. B. Tiddeman, 11, Gray's Inn-place, W.C.1.

E. W. Martin & Co. (Builders and Decorators), Ltd. Registered March 10. 2, Evangelist-court, E.C.4. Carpenters, joiners, builders, etc. Nominal capital, £400.

Johnson & Co. (Hucknall), Ltd. (273,787). Registered March 10. Builders, etc. Nominal capital, £1,000. S. E. Johnson, Watnall-road, Hucknall.

Bilbrocob, Ltd. (273,804). Registered March 11. 16-17, Devonshire-square, E.C.2. Builders' merchants. Nominal capital, £2,000.

W. Hewitt & Son (Stambermill), Ltd. (273,828). Registered March 11. Tile Manufacturers. At Stamber Mill, near Stourbridge. Nominal capital, £2,500.

CURRENT & PROPOSED BUILDING WORK*

Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E. for Board of Education; M.W.B. for Metropolitan Water Board; Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; Surveyor, S.; Engineer, E.

Aberdeen.—From plans by the City Architect (Education), Mr. J. Ogg Allan, Union Terrace, Aberdeen, it is proposed to erect a new school at Inch.

Accrington.—T.C. passed:—Extension to motor-house, Ewbank Works, for Entwisle & Kenyon, Ltd.

Adwick-le-Street (W. Yorks).—West Riding C.C. propose in Windmill Balk-lane a new grammar school. Plans by W. Wormald, County Hall, Wakefield.

Andover.—T.C. passed:—Lay-out of roads and sewers for Charlton Harroway estate, for Messrs. A. Marchment & Sons, of Home Farm, Charlton; rebuilding of "Railway Tavern," Weyhill-rd., for Strong & Co., of Romsey, Ltd.; lay-out plans of roads and sewers for building estate off Humberstone-rd., for W. B. Withers, of Roman Cottage, Winchester-rd.

Barnsley.—56 houses at Buxton-grove are proposed by T.C.

Bebington.—Robert Hughes, builder, Prenton, proposes 170 houses in Alport-lane.

Bedworth.—Plans approved by U.D.C. include:—Alterations and additions to "Bull's Head," Bass, Ratcliff & Gretton, Ltd.

Birmingham.—E.C. approved and forwarded to B. of E. preliminary plans for school on Glebe Farm estate, Stechford. Architect, H. T. Buckland, F.R.I.B.A., Norwich Union-chams., Congreve-st., Birmingham; and quantity surveyor, A. Rowse, 117, Colmore-row.

Blyth.—Newcastle Diocesan Board of Finance propose church for parish of St. Cuthbert's, Blyth, and site been informally reserved.

Bolsover.—Mrs. M. Woodhouse, Moorfield-lane, acquired site corner of Croft-lane and Welbeck-rd., for billiards hall. Plans by A. Day, Moorfield-lane.

Boston.—R.D.C. proposes 68 new houses in rural area.

Bradford.—Halifax Building Society, Commercial-st., Halifax, propose erection of offices at 1,064-1,066, Leeds-rd., Laisterdyke. George E. Hinchcliffe, A.R.I.B.A., Tower Chambers, Silver-st., Halifax.

Bradford.—E. Brooksbank is to erect 114 houses at Tong-st.

Bromley.—T.C. passed:—T. Spencer Bright, 12 houses, Magpie Hall-lane; C. White, 8 houses, Church-lane; T. Spencer Bright, 20 shops, Southborough; T. Spencer Bright, 28 houses, St. Augustine's-av.

Bromsgrove.—G. C. Gadd, A.R.I.B.A., Town Hall-chms., is the architect for extensions proposed to the Bromsgrove Cottage Hospital. General Secretary, Mr. Frank Dudley.

Bury St. Edmunds.—New elementary school for girls is proposed.

Cannock.—U.D.C. proposes 52 houses on Pye Green site; further houses at Princess-st., West Chadsmoor; and 6 houses on Walsall-rd. estate, to plans by S. Harrison, architect.

Chester.—T.C. proposes extra dressing-room accommodation at Public Baths in Forest-st., to plans by City S.—T.C. is considering plans for 10 houses at Christleton-rd., for A. H. Moorcroft. Plans passed include:—Alterations at "Royal Oak," Foregate-st., for Bass & Co., Ltd.; alterations to premises in Eastgate-st. and Eastgate-st.-row, for Boots (Western), Ltd.

Derby.—Stretton's Derby Brewery, Ltd., are proposing new licensed premises in Sinfin-lane, Normanton. Plans by T. H. Thorpe, F.R.I.B.A., St. James-st., architect.

Dublin.—Plans passed by the City Architect include:—10 houses at Kimmage-rd., E., C. Archer; alterations to buildings at Clontarf-station, for G.N. Railway; 12 houses at Sandymount-av., Kearon & Rothwell; additions to Whitefriars-st. national school; 16 houses at Sandymount-rd., T. Spendlove; 14 houses at Bushy Park-rd., W. G. Bailey; lock-up shops and office at North Circular-rd., Mrs. Kavanagh.

Ealing.—T.C. passed: Tavistock-avenue, 8 houses, for E. B. Burge, 83, Ealing Park-gdns., Ealing, W.5; Erlesmere-gdns., 7 houses, for E. Read, Estate Office, Mount Pleasant-rd., Ealing; Rydal-cres., 6 houses, for B. Smith & Son (Builders), Ltd., Estate Office, Halsbury-rd. West, Northolt; Tavistock-av., 9 houses and 1 garage, for A. Watson, Ltd., Estate Office, Tavistock-av., Greenford; Rydal-cres., 22 houses, for Lancaster & Sons, 30, Ealing-rd., Wembley; Clauson-av., 11 houses, for W. Gradwell & Co., Ltd., Farnham-rd., Slough; Ruislip-rd., 9 shops, for W. Hurst, 83, Ruislip-rd., Greenford.

Eccles.—T.C. propose the erection of buildings at Winton for a branch library, public conveniences and shelter.—T.C. approved lay-out of land at Haddon-rd. for 100 houses.

Gillingham (Kent).—Council approved:—8 houses, Corporation-rd., submitted by A. E. V. Newnham, for C. J. Howard; 6 houses, Star-lane, submitted by H. Hinckley, for himself; 2 blocks of 6 and 7 villas, Lewis-av., submitted by F. B. Hooper, for W. H. Holden; 5 houses, Woodlands-rd., submitted by Messrs. Read & McDermott, for themselves.

Grange-over-Sands.—The Carnforth Co-operative Society, Ltd., New-st., propose extensions to the branch premises, Kent's Bank-rd. Plans prepared by the Architects' Department, Co-operative Wholesale Society, Ltd., Balloon-st., Manchester.

Harpenden.—U.D.C. passed:—8 houses, Piggotts-hill-lane, Freeman Bros., Ltd.

Huddersfield.—T.C. has received M.H. sanction to the loan for the building of 140 houses on the Wormald-st. site, Almondbury.

Hull.—T.C. is to build 63 2-story flats.

Hyde.—Crompton Brothers, builders, 44, Stockport-rd., propose on Ashton-rd., Newton, 55 modern houses.

Ilkeston.—Health Committee propose the provision of a new isolation hospital. A consulting architect is to be engaged.

Kendal.—Plans for open-air school for T.C., to cost £5,000, being drawn up by F. W. Oxberry, B.E.

Leamington.—T.C. has received M.H. sanction to erect new conveniences in Holly-walk, at £3,050.

Leeds.—A scheme for the conversion of premises at West Vale, Leeds, into a 6-story factory, is to be undertaken shortly by Messrs. Blackburn Bros., dyers, Asquith Bottom Dye Works, Sowerby Bridge, Yorkshire. Neither an architect nor builder has been selected, it is stated.

Leeds.—Extensions are to be carried out at the Kirkgate Drapery Stores, for Walker, Ltd. Plans by Mr. Paxton, architect, Park-row, Leeds.

London (Battersea).—B.C. approved estimates by B.S. in respect of following works:—External painting, etc., electric house, Lavender Hill substation, stores, etc., £289 18s.; and external painting, etc., stores buildings, Harroway-rd., £20 13s. 6d.

London (Bermondsey).—L.C.C. recommend B.C. to borrow £41,280, for Vauban-st. clearance area, and £5,865, for housing on Millpond estate.

London (Deptford).—L.C.C. recommend purchasing by Greenwich B.C. of site in Creek-rd. for public convenience.

London (Deptford).—B.C. received approval to two clearance schemes. One at Bronze-st. and other at Speedwell-st.

London (Hackney).—L.C.C. recommend £7,000 submitted in respect of acquisition and clearance under Housing Act, 1930, of property in Northwold-rd. area (northern section).

London (Hackney).—B.C. is to undertake redecoration of electrical showrooms, Lower Clapton-rd., to plans by Mr. J. A. Bowden.

London (Paddington).—The B.C. is to carry out rebuilding and reconstruction on the Clarendon-st. slum clearance area.

London (Roehampton).—Messrs. Ray Gibson, Ltd., 132, Priory-lane, S.W.15, are connected with a proposal to erect 10 houses at Templeton-rd., Roehampton.

London (Wandsworth).—B.C. is to erect dressing-shelter at King George's Park, at £175, to plans by B.S.—B.C. is about to invite tenders for erection of dwellings on Magdalen Park estate.

Long Eaton. — R.D.C. passed:—Mess-rooms, Stapleford-lane, Toton, for F. W. Chambers & Co.; 10 houses, Harriett-st., for W. T. Norris & Sons.

Manchester.—Mrs. H. Mee, 4, Broadway, Cheadle, proposes to convert 10 houses into 10 shops and houses and lock-up shop at 478 and 482, 496 and 496a, Wilbraham-rd. and Manchester-rd., Chorlton-cum-Hardy. Plans by Pendleton & Dickinson, 16, Brazennose-st.—T. E. Davidson, Son & Sherwood, 4, Rectory-drive, Gosforth, Newcastle-on-Tyne, prepared plans for Fifth Church of Christ Scientist at Mosley-rd. and Green-drive, Levenshulme, for Congregation of Scientist Church.

Newcastle-on-Tyne.—Plans for extensive alterations and improvements to St. Mary's R.C. Schools, Cross Villa-place, Newcastle, have been approved. Architect is Mr. R. Burke, 12, Grey-st. No contract let.

Oldham.—Rev. A. E. Fraser, Oakham Vicarage, near Leicester, proposes parish hall, to accommodate 300 persons.

Portsmouth.—T.C. passed:—Builder and owner, R. J. Winnicott, 7 houses, Telford-rd.; owners, A. E. Hooper & C. F. Saunders, alterations to cinema, Lake-rd.; owners, McCarthy Bros., 9 houses, Kirby-rd.; builder and owner, G. Wallis, 86 houses, Hilsea; builder and owner, A. J. Chase, 6 houses, 1 shop, 7 garages, Copnor-rd.; builders and owners, F. W. Devenish, 12 lock-up garages, St. Chad's-av.

Rotherham.—Wynyard Dixon, 16, St. James-row, Sheffield, is architect for new licensed premises in Fitzwilliam-rd., the "Black Swan" Hotel, for Tennant Bros., Ltd., Exchange Brewery, Sheffield.

Scarborough.—T.C. is to erect 50 houses on the Northstead Housing estate. Plans by Corporation Architect.

Southampton.—T.C. approved:— 16 houses, Kathleen-rd., for A. H. Stagg; 7 houses, Welbeck-av. (amended), for H. Rule; church and school, Warren-crescent, for Shirley Baptist Church; Vicarage, South Stoneham Church, for the vicar and churchwardens; additions, offices, Cuckoo-lane, for the Southampton & Isle of Wight Royal Mail Steam Packet Co., Ltd.

Southend-on-Sea.—T.C. passed:—6 houses, St. James-gardens, F. J. Gregory; amended plan of alterations and additions, 108, Hamlet Court-rd., F. W. Woolworth & Co., Ltd.; sports stadium, Sutton-rd., Milton Hall Brickfields, Southend Stadium, Ltd.; 8 houses, Mannering-gardens, A. Burton.

South Shields.—T.C. is to consider:—32 bungalows in Readhead-rd., Grosvenor-drive and Tynedale-rd., for W. J. Robertson; 32 houses in Coleridge-av., for M. Swales; 48 houses in Harton-lane, Nora-st., Egerton-rd. and Talbot-rd., for Gus. Bailey, Ltd.; 17 houses in Cranford-st., for F. Buffham; 7 houses in flats at Brownlow-rd. for F. Buffham; 8 houses in flats in Gordon-rd., for F. Buffham.

Sunderland.—G. T. Brown, 51, Fawcett-st., Sunderland, is architect for 140 houses on the Gabriel estate, Sunderland.

Swansea.—S. Allsopp & Sons, Ltd., Burton-on-Trent, are to rebuild their Terminus Hotel, to plans by Mr. W. Blair, 160, High-st., Burton.

Tenbury.—Henry Rowe & Son, 38, Foregate-st., Worcester, are the architects for a new fire station and administration offices, for the U.D.C.

Todmorden.—T.C. propose erection of 50 houses on Ashenhurst-lane.

Tynemouth.—A. E. Brannen & Co., builders, North Shields, have started on the lay-out of 136 houses on the Broadway and Mast-lane estate. J. R. Wallace, 20, Northumberland-square, North Shields, is the architect.

Wakefield.—T.C. passed:—W. H. Ogden, 10 houses in Duke of York-st., for M. Arnold; Kay & Lunan, 6 houses in Dewsbury-rd., for J. Caton; J. P. Firth, 8 houses in Ashleigh-av., for George Crook & Sons, Ltd.

Washington.—With M.H. approval 48 houses are to be erected to complete the Heworth-rd scheme, and tenders are to be invited by U.D.C.

Wellingborough.—U.D.C. passed:—Mr. E. H. Giles, 12 houses and garage, Eastfield-rd.; Wellingborough Investment Building Society, new offices, Oxford-st.; J. W. Williamson & Sons, shop, showrooms and flat, Silver-st.

West Lancashire.—The following plans were approved by R.D.C.:—Café and garage, Southport-rd., Scarisbrick, A. Hughes, Southport-rd., Scarisbrick; lay-out and plans for 17 pairs of bungalows and bungalow shop, Long-lane, Aughton, Carr & James, per Messrs. Ralph & Son, Wigan.

Whitby (Yorks).—Proposals to be carried out by the U.D.C. include the construction of a dock-end wall, at a cost of £6,000; flood prevention schemes, £20,000; a sewerage scheme at Larpool, £3,000; and a similar scheme at Carr Hill, £5,500; and the erection of a house for the Kirk Collection, £3,000.

Whitwood-Mere.—A licence has been approved for the proposed New Hotel at Three Lane Ends, for Messrs. Carters Knottingley Brewery Co., Ltd. Architects, Pennington, Hustler & Taylor, Ropergate, Pontefract.

Wolverhampton.—T.C. passed:—Moore & Garnham, office and store, Walpole-st.; the Bushbury Estate & Building Co., 6 houses, Stafford-rd., Fordhouses, and 6 houses, Marsh-lane, Fordhouses; Courtaulds, Ltd., pump house and well at factory, Hordern-rd.; H. F. Spencer & Co., extension to offices, Bilston-rd. and Eagle-st.; E. Leach & Co., 10 houses and pair semi-detached houses, Victoria-rd.; T. Wellings & Sons, 7 blocks of 4 houses, Victoria-rd.; Post Office Telephones, new garage, Post Office Telephone Exchange, Red Lion-st.; Wolverhampton Freeholders' Building Society, rebuild front portion of premises, Queen-square; T. Jones, 16 houses and one as a shop, Jones'-av.; Wolverhampton Freeholders' Permanent Building Society, revised plan of premises, Cheapside; A. Brothwood, additions to premises, 32-33, Steelhouse-lane.

Workington.—T.C. propose to acquire premises for the provision of a swimming bath. J. Penman, B.E., Town Hall.

*See also List of Contracts, Competitions, etc.

***** In these lists every care is taken to ensure that information given is accurate and up to date, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced.**

PRICES CURRENT OF MATERIALS.*

Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by enquiry

BRICKS, &c.

Per 1,000 Alongside, in River Thames, up to London Bridge.

	£ s. d.
Best Stocks	4 3 6
Second Hard Stocks	3 18 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
"Phorpres"	2 11 3	Flettons, B'lln'se	3 6 3
Flettons at King's Cross	2 11 3	Best Blue Pressed Staffs	9 5 0
Do., grooved for Plaster	2 13 3	Do. Bullnose	9 15 0
		Blue Wire Cuts	7 5 0

White Midhurst Facing Bricks (delivered London site) 5 0 0
"Phorpres" Whites (do.) 3 17 3
"Phorpres" Rustic Facing Bricks, delivered Central London ..... per 1,000 3 12 3
Best Stourbridge Fire Brick :—

2½ in.	8 11 0	3 in.	10 3 0

GLAZED BRICKS—			
Best White Ivory and Salt Glazed Stretcher	21 0 0	D'ble Str'tch'rs	29 10 0
		D'ble Headers	26 10 0
Headers	20 10 0	One side and two Ends	30 10 0
Quoins, Bullnose and 4½ in. Flats	27 10 0	Two Sides and one End	31 10 0
		Splays and Squints	28 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

PARTITION SLABS.

Delivered London Area.

CLINKER CONCRETE.			
2" per yd. sup.	1 6	3" per yd. sup.	2 0
2½" " "	1 8	4" " "	2 4
CRANHAM TERRA COTTA.			
2" per yd. sup.	3 3	3" per yd. sup.	3 10
2½" " "	3 7	4" " "	4 4
HEMPSTEAD—KEYED TWO SIDES.			
2" per yd. sup.	3 3	3" per yd. sup.	3 9
2½" " "	3 6	4" " "	4 3

	s. d.	
Thames Ballast	6 6 per yd.	delivered 2 miles radius Paddington.
Pit Ballast	5 6 " "	
Pit Sand	7 0 " "	
Washed Sand	7 6 " "	
¾ in. Shingle	6 6 " "	
¾ in. Broken Brick	10 6 " "	
Pan Breeze	7 6 " "	

CEMENT.

Per ton delivered in London area in full van loads.

	£ s. d.
Best Portland Cement. British Standard Specification. Test	
In Jute Sacks (11 to ton)	2 4 9
In Paper Bags (20 to ton)	2 6 0
Colorcrete No. 1 & 2 Coloured Rapid Hardening Portland Cement in 1 cwt. paper bags free (non-returnable) 20/- per ton above Portland Cement Price.	
"Snowcrete" White Portland Cement in 1 cwt. paper bags free (non-returnable) 190/- per ton.	
Alongside Vauxhall in 80 Ton Lots	
Jute Sacks (11 to ton)	1 17 9
Paper Bags (20 to ton)	1 19 0
Ferrocrete per ton extra on above	0 7 6
Vitrocrete per ton extra on above	0 7 6

NOTE.—Jute Sacks are charged 1s. 6d. each and credited 1s. 6d. each nett if returned in good condition within three months, carriage paid.

Super Cement (Waterproof) Paper Bags free	3 16 0
Roman Cement	6 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
" " Pink	5 10 0

PLASTER.

Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" Fine	4 12 0
Sirapite, Coarse	3 9 0
" Finish	3 17 0
Grey Stone Lime	2 5 0
Chalk Lime	2 5 0
Best Ground Blue Lias Lime	1 17 6
Hair ..... per cwt.	2 2 6
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d., if returned in good condition within three months carr. pd.

Stourbridge Fireclay in sacks 37s. 0d. per ton at rly. dep.

STONE.

	s. d.
BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 10
BEER STONE—RANDOM BLOCK—	
Free on rail at Seaton Station, per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. per ft., cube	3 1½
Selected approximate size one way, 1d. per cubic foot extra ; selected approximately three sizes or for special work, 3d. per cubic foot extra.	
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4½
Do. do. delivered on road waggons at above stations, per ft. cube	4 5½
White basebed, 3d. per ft. cube extra.	
NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.	
HOPTON-WOOD STONE—	s. d.
F.O.R. Quarries, Wirksworth, Derbyshire, Random blocks from 10 ft. and over P.ft.cb.	14 0
Sawn two sides	22 6
Sawn, three or four sides	27 6
CHILMARK—RANDOM BLOCK—	
At Nine Elms, per ft. cube	3 11
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station London.	
6 in. sawn two sides landings to sizes (under 30 ft. super) ..... Per ft. super	5 6
6 in. rubbed two sides, ditto ..... "	6 0
3 in. sawn two sides slabs (random sizes) "	2 9½
2 in. to 2½ in. sawn one side slabs (ransom sizes) ..... "	1 6½
1½ in. to 2 in. ditto ..... "	1 3½
HARD YORK—	
Delivered at any Goods Station, London.	
Scappled random blocks ..... Per ft. cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super) ..... Per ft. super	5 1½
6 in. rubbed two sides, ditto .... "	6 1½
4 in. sawn two sides slabs (random sizes) "	3 1½
3 in. ditto ditto "	2 8
2 in. self-faced random flags .... Per yd. super	8 0

CAST STONE.

Delivered in London area in full van loads, per ft. cube : Plain, 8s. 6d. ; Moulded, 9s. 6d. ; Cills, 10s. 0d.

SOFT WOOD.

GOOD BUILDING DEAL.

Inches.	Per stan.	Inches.	Per stan.
4 × 11	£23 10	3 × 6	£17 10
4 × 9	22 10	3 × 11	19 10
4 × 8	21 0	2 × 11	19 10
4 × 7	19 0	3 × 9	19 10
3 × 8	18 0	2½ × 9	19 10
3 × 7	18 0	3 × 4½	17 10
2½ × 7	18 0	3 × 4	17 10

PLANED BOARDS.

1 × 11	£22 10	1 × 9	£21 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
⅝	16/-	1½	25/-
¾	17/-	1¼	27/6
1	20/-		

TONGUED AND GROOVED FLOORING.		MATCHING (BEST).	
Inches.	per sq.	Inches.	per sq.
1	21/-	⅝	16/-
1¼	26/-	1	18/6
1½	27/6	1	22/6
Ins. BATTENS.	s. d.	SAWN LATHS.	s. d.
¾ × 2 ..per 100 ft.	2 6	Per bundle	2 3

HARD WOOD.

1 INCH AND UP THICK.

Average price for prime quality	£ s. d.
Dry Austrian Wainscot, per ft. cube	0 15 0
Dry American and/or Japanese Figured Oak, per ft. cube	0 12 0
Dry American and/or Japanese plain Oak, per ft. cube	0 10 0
Dry sq. edged Honduras Mahogany, per ft. cube	0 14 0
Dry log-cut Honduras Mahogany, per ft. cube	0 16 0
Dry Cuba Mahogany, per ft. cube	1 1 0
Dry Teak, per ft. cube	0 14 0
Dry American Whitewood, per ft. cube	0 10 0
Best Scotch Glue, per cwt.	3 0 0
Liquid Glue, per cwt. ..... 4 7 0 to 5 10 0	

SLATES.

First quality, slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12	25 0 0	18 by 10	15 12 6
22 by 12	25 0 0	18 by 9	13 15 0
22 by 11	22 10 0	16 by 10	13 10 0
20 by 12	22 0 0	16 by 8	10 7 6
20 by 10	19 7 6		

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons.

	Per 1,000 f.o.r. London.
Best machine-made tiles from Broseley or Staffordshire district	£4 7 0
ditto hand-made ditto	5 0 0
Ornamental ditto	5 8 6
Hip and valley tiles (per dozen) { Hand-made	0 9 6
{ Machine-made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—	£ s. d.
R.S. Joists, cut and fitted	£11 0 0
Plain Compound Girders	12 0 0
" " Stanchions	15 0 0
In Roof Work	18 0 0

MILD STEEL ROUNDS.—To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	12 0 0	⅝ in. to ½ in.	10 15 0
⅜ in.	11 0 0	¾ in. to 2¼ in.	10 10 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Standard Wrot. Mild Steel Tubes and Tubulars Sizes ⅛in. to 6in. %	Genuine Wrot. (Puddled) Iron Tubes and Tubulars Sizes ⅛in. to 6in. %	Standard Fittings Sizes ⅛in to 6in. %	Standard Flanges Sizes ⅛in. to 6in. %
Gas	65	52½	57½	70
Water	61½	48½	52½	65
Steam	57½	45	47½	60
Galv. gas	52½	40	47½	60
Galv. water	47½	35	42½	55
Galv. steam	42½	30	37½	50

C.I. HALF-ROUND GUTTERS—London Price ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	11d.	1/5	5d.
3½ in.	11½d.	1/7	5d.
4 in.	1/0½	1/9	5d.
4½ in.	1/1½	2/-	6d.
5 in.	1/5	2/2	8d.

O.G. GUTTERS.

3 in.	1/1	1/11	5d.
3½ in.	1/2	1/11	5d.
4 in.	1/2½	2/-	5d.
4½ in.	1/4	2/4	6d.
5 in.	1/6½	2/8	8d.

RAIN WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches. stock angles.
2 in.	1/3½	1/0	2/7
2½ in.	1/4½	2/-	3/1
3 in.	1/8½	2/6	3/9
3½ in.	2/1½	3/-	4/4
4 in.	2/5	3/7	5/3

Connections—50 per cent. off above prices.
Tonnage allowance—4 ton lots, 5 per cent.
2 ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices ex Works.

	Pipe, angles, stock angles.	Bends, stock Branches. Pipe, angles, stock angles.
	s. d.	s. d. s. d.
2 in. per yd. in 6 fts.	2 0	1 6½ 1 10½
2½ in. "	2 4	1 8½ 2 4
3 in. "	2 6	1 10½ 2 9½
3½ in. "	2 8	2 4 3 3
4 in. "	3 1	2 7½ 3 9

L.C.C. COATED DRAIN PIPES—London Prices ex Works.

	Pipe, angles, stock angles.	Bends, stock Branches. angles.
	s. d.	s. d. s. d.
3 in. per yd. in 9 ft. lengths	3 10	4 3 7 0
4 in. " 1 1 20	5 2	5 0 8 9
5 in. " 1 2 22	6 3	8 9 15 0
6 in. " 2 0 6	7 3	10 3 18 0

Gaskin for jointing 41/- per cwt.

	Per ton in London. £ s. d.	£ s. d.
IRON—		
Common bars	10 0 0 to	10 10 0
Staffordshire Crown Bars—Good merchant quality	10 10 0 to	11 0 0
Staffordshire Marked Bars	14 0 0 ..	15 0 0
Mild Steel Bars	9 0 0 ..	10 0 0
Steel Bars, Ferro-Concrete quality, basis price	8 0 0 ..	9 0 0
Hoop iron, basis price	11 0 0 ..	12 0 0
" Galvanised	27 0 0 ..	28 0 0
Soft Steel Sheets, Black—		
Ordinary sizes, to 20 g.	11 0 0 ..	11 10 0
" " " 24 g.	12 0 0 ..	13 0 0
" " " 26 g.	14 0 0 ..	15 0 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	13 0 0 ..	14 0 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	14 0 0 ..	15 0 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	17 0 0 ..	18 0 0
No. 1 quality £4 per ton extra.		
Flat and Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 9 ft. to 20 g.	13 0 0 ..	14 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	14 10 0 ..	15 10 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	16 0 0 ..	17 0 0
Sheets, Galvanised Flat, Best quality—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	16 10 0 ..	17 10 0
Best Soft Steel Sheets, 22 g. and 24 g.	18 10 0 ..	20 10 0
Best Soft Steel Sheets, 26 g.	20 0 0 ..	21 10 0
Cut Nails, 3 in. to 6 in. (Under 3 in. usual trade extras.)	15 0 0 ..	16 0 0

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

COPPER.

	s. d
Seamless Copper tubes (basis) ..... per lb.	0 9
Strong sheet ..... "	0 10
Thin ..... "	0 11
Copper nails ..... "	1 0
Copper wire ..... "	0 11

PLUMBERS' BRASS WORK.

Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. **Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.**

PRICES CURRENT OF MATERIALS—*(contd.).*

River Pattern Screw Down Main Ferrules.

½ in.	¾ in.	1 in.
29/-	60/-	116/6 per doz.

Caps and Screws.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

Double Nut Boiler Screws.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	29/-	36/-	63/- per doz.

Brass Sleeves.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

New River Pattern Croydon Ball Valves S.F.

½ in.	¾ in.	1 in.	1½ in.	1¾ in.
35/-	56/-	98/-	162/-	228/- per doz.

Drawn Lead P. & S. Traps with Grass Cleaning Screw.

	1¼ in.	1½ in.	2 in.	3 in.	
8 lbs. P. traps....	33/-	41/-	56/-	101/-	per doz.
8 lbs. S. traps....	35/-	45/-	66/-	126/-	,,

Tin.—English Ingots, 1/8 per lb. **Solder.**—Plumber's 9d., Tinmen's 10d., Blowpipe 11d. per lb.

LEAD, &c.

(Delivered in London.)	£	s.	d.
Lead—Sheet, English, 4 lb. and up	19	10	0
Pipe in coils	16	10	0
Soil pipe	23	0	0
Compo pipe	23	10	0

Note.—Country delivery, 20s. per ton extra; lots under 3 cwt. 4s. per cwt. extra, and over 3 cwt. and under 5 cwt., 2s. 6d. per cwt. extra. Cut to sizes 4s. cwt. extra.

Old lead, ex London ares, at Mills .....per ton } £10 0 0

PAINTS, &c.

		£	s.	d
Raw Linseed Oil, in pipes.....	per gallon	0	1	9
,, ,, ,, in barrels	,,	0	1	11
,, ,, ,, in drums	,,	0	2	2
Boiled ,, ,, in barrels	,,	0	2	3
,, ,, in drums	,,	0	2	5
Turpentine, in barrels	,,	0	5	6
,, in drums (10 galls.)	,,	0	5	8
Genuine Ground English White Lead, per ton (In not less than 5-cwt. casks.)		45	0	0

Extra for 1-cwt. kegs over 5-cwt. casks is 5/9 cwt.

Genuine White Lead Paint.

"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J" Brand, and other best brands (in 14-lb. tins) not less than 5-cwt. lots per ton delivered £ 63 s. 0 d. 0

Red Lead, Dry (packages extra) .. per ton	34	0	0
Best Linseed Oil Putty ..... per cwt.	0	13	6
Size. XD quality ..... fkn.	0	3	0

VARNISHES, &c.

		Per gallon.		
Oak Varnish	Outside	0	14	0
Fine ditto	ditto	0	16	0
Fine Copal	ditto	0	18	0
Pale Copal	ditto	1	0	0
Pale Opal Carriage	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	0
Fine Copal Flatting	ditto	1	0	0
Hard Drying Oak.....	ditto	0	18	6
Fine Hard Drying Oak	ditto	0	19	6
Fine Copal Varnish	ditto	1	0	0
Pale ditto	ditto	1	12	6
Best ditto	ditto	1	2	6
Best Japan Gold Size		0	12	0
Best Black Japan		0	10	0
Oak and Mahogany Stain (water)		0	12	6
Brunswick Black		0	7	0
Berlin Black		0	14	0
Knotting (patent).....		1	5	0
French and Brush Polish		0	17	0
Liquid Dryers in Terebene		0	9	0
Cuirass Black Enamel.....		0	7	0

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per ft.		Per ft
15 oz. fourths..	2½d.	32 oz. fourths.....	6d.
15 ,, thirds ..	2½d.	32 ,, thirds	8d.
21 ,, fourths ..	3½d.	Obscured Sheet, 15 oz...	3d.
21 ,, thirds ..	3½d.	,, ,, 21 oz...	4½d.
26 ,, fourths ..	4d.	Fluted, 15 oz. 6½d., 21 oz.	9d.
26 ,, thirds ..	5½d.	Em'lld,15 oz. 4½d., 21 oz.	5½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED plate in CRATES OF STOCK SIZES.

	Per ft.
Rolled plate ¼ in.	4½d.
Rough rolled ⅜ in.	5½d.
Rough rolled ½ in.	5½d.
Figured, Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish White..	5½d.
Ditto, tinted	8d.
Rolled Sheet	4½d.
White Rolled Cathedral	4½d.
Tinted do.	6½d.

Cast plate is same price as rough rolled.

"VITA" GLASS.	Per foot. s.	d
Clear sheet—not exceeding 1 foot	1	0
Do. do. 2 feet	1	3
Do. over 2 feet	1	9
Polished plate—not exceeding 1 foot	1	6
Do. not exceeding 2 feet.....	3	0
Cathedral—not exceeding 1 foot	1	0
Do. larger sizes	1	6
Horticultural Sheet and Cathedral "Vita" Glass. Sizes up to 24 inches by 18 inches or not exceeding 3 feet	1	0
3/16 in. Wired Georgian Design. Sizes up to 108 inches long by up to 24 inches wide	2	6

NEW BUILDINGS IN SCOTLAND

The Editor would be glad to receive information for publication under this heading from architects, builders, or other persons concerned. Items should be received at The Builder *Office not later than Tuesday morning.*

Arbroath.—Houses.—The T.C. is to erect 64 houses on the Brechin and Montrose-road sites.

Dundee.—School.—The T.C. is to build a new school, to cost £2,340.

Dundee.—Buildings.—Plans of proposed new buildings, etc., in Dundee have been lodged at the office of the City Engineer, as follow :—Carnegie-street : Additions for D. and J. Thomson. Architect, George Jamieson, 20, Whitehall-street. Constable-street : Alterations for J. and J. Hunter. Architects, Gauldie, Hardie and Sharpe, 26, Commercial-street. Cowgate : Alterations for J. and E. Shepherd. Architects, Johnston and Baxter, 114, Seagate. Ellen-street and Ness-street : Alterations for A. B. MacBain. Architects, Gauldie, Hardie and Sharpe, 26, Commercial-street. Fleuchar-street : Alterations for Archibald Mill. Architects, Gauldie, Hardie and Sharpe, 26, Commercial-street. Hill-street, Broughty Ferry : Alterations for W. M. Wilson. Plans by petitioner. Hilltown : Alterations for A. B. MacBain. Architects, Gauldie, Hardie and Sharpe, 26, Commercial-street. Nesbitt-street : Bungalow for William Black. Architect. W. M. Patrick, 26, Yeaman Shore. Westfield-lane : Additions for Valentine and Sons, Ltd. Architect, W. M. Patrick, 26, Yeaman Shore.

Dunfermline.—School.—A new high school is to be built, to cost £95,000.

Edinburgh. — Reservoir. — Corporation have on hand a scheme for the construction of a new £500,000 reservoir at the Fruid Valley. Messrs. Leslie and Reid, Water Department Engineers, Edinburgh.

Eyemouth.—Sea Wall.—The Corporation have a scheme on hand for the construction of new sea wall and promenade, estimated to cost £20,000.

Fife.—Hall.—Mrs. C. H. A. Duncan, of Wormit, has left £4,000 for the construction of a public hall in the village of Gauldry.

Glasgow. — Buildings. — In Paisley-road West, Cardonald, the Glasgow Estates Development Co., Ltd., will build 8 single and 3 double shops, and they will also build a similar block on the road running east from Hillington-road. Plans for these have been passed by the Dean of Guild Court, as well as plans for Corporation of Glasgow Electricity Department, sub-station at Jamieson-street, Govanhill; Education Department, drill hall at Pollokshields School, Melville-street; Shettleston Co-operative Society, shop at Carntyne-road, Shettleston; Most Rev. Donald M'Intosh, D.D., and others, trustees of the R.C. Archdiocese of Glasgow, parochial hall, Manresa-place.

Greenock.—Houses.—T.C. is to erect 156 houses on Bow Farm estates.

Insch (Aberdeenshire). — School. — The Finance Committee of the County Council of Aberdeenshire has approved a scheme for the extension of Insch School at a cost of £4,300.

Linlithgow. — Houses.—T.C. proposes 7 houses in High-street and Preston-road.

Stirling.—Extensions.—The directors of the Stirling Royal Infirmary have under consideration a scheme for £10,000 extensions.

NEW CINEMAS

Coalville.—Plans for the rebuilding, as a cinema, of the Olympia Theatre, Coalville, submitted to the Urban Council by Mr. C. K. Deeming, have been approved, and the work is shortly to commence. The new building will seat 1,300 people.

Dublin.—Plans have been approved for additions to the cinema in Serpentine-avenue, for Mr. O'Neill.

Kettering.—Mr. T. H. Bamford, proprietor, has submitted plans for the "New Empire" Cinema, proposed to be erected in Montagu-street. These were provisionally approved.

Portsmouth.—The Portsmouth Corporation has passed plans submitted by Mr. C. F. Saunders and Mr. A. E. Hooper, the owners, for alterations to the cinema in Lake-road.

Princes Risborough.—Plans have been presented to the Council and passed for the 360-capacity cinema proposed at Duke-street. Mr. A. Noble, Princes Risborough, is the builder, and Mr. J. E. Farrell, Castle-street, High Wycombe, the architect. The promoters are Regent Cinema and Hall (Princes Risborough), Ltd.

Reigate.—Preliminary plans are in course of preparation for the erection of a large cinema with seating accommodation for 2,000 persons, a central site having been acquired. The architects are Messrs. Ward and Woolnough, 8, South Brink, Wisbech, Cambs., in conjunction with Mr. David J. Barry, Bank Chambers, Market-place, Reigate. No contracts have been placed yet.

South Shields.—A scheme is under consideration for the building of a news theatre at South Shields on the site of the Grand Electric Cinema, which was burnt down over 12 months ago. Messrs. J. H. Morton and Sons, F.R.I.B.A., Martins Bank Chambers, Fowler-street, South Shields, are the architects.

Tynemouth.—The Tynemouth Galaland, Ltd., "Plaza" Grand-parade, Tynemouth, is to carry out, by direct labour, a scheme for extensive alterations to the "Plaza" Cinema.

Welling (Kent).—Mr. Leasnse, of the Broadway Cinema, Bexley Heath, is chief promoter in a scheme for the building of a picture house on a site adjoining the "Guy, Earl of Warwick," public-house. A building to accommodate about 2,000 persons is proposed but no definite plans have been adopted yet.

BUILDING TRADE WAGES IN SCOTLAND*

Following are grade rates authorised by the Scottish N.J.C. for Building Industry. The bricklayers in the Glasgow district have ½d. per hour extra. Painters, by ruling of the Scottish National Painters' and Decorators' Joint Council, have from January 1 new rates. Grade A towns, 1/6 per hour; Grade B, 1/5; Grade C, 1/4; Aberdeen has a special rate of 1/5½. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classifications ...	A	A¹	A²	A³	B	B¹	B²	B³
Craftsmen	1/6	1/6	1/5½	1/5	1/4½	1/4	1/3½	1/3
Labourers	1/2	1/1½	1/1½	1/0½	1/0½	1/-	/11½	/11½

Aberdeen	A	Dundee	A	Hawick	A³	Perth	A
Airdrie	A	Dunfermline	A	Helensburgh	A	Perthshire	A
Alexandria	A	Duncon	A	Inverness	B	Peterhead	A
Arbroath	A²	East Lothian	A	Kilmarnock	A	Renfrewshire	A
Ayrshire	A	Edinburgh	A	Kincardineshire	A³	Rothesay	A
Bathgate	A	Falkirk	A	Kinross-shire	A	Roxburghshire	A³
Bo'ness	A	Forfarshire	A³	Kirkcaldy	A	St. Andrews	A
Broughty Ferry	A	Fort William	A	Lanarkshire	A	Selkirkshire	A
Clackmannanshire	A	Galashiels	A³	Leith	A	Stirling	A
Coatbridge	A	Glasgow	A	Midlothian	A	Stirlingshire, West	A¹
Dumbartonshire	A	Greenock	A	Motherwell	A	West Lothian	A
Dumfries	A²	Hamilton	A	Peeblesshire	A³	Wishaw	A
Dumfriesshire	A³						

* The information given in this table is copyright. The rates of wages in various towns in England and Wales are given on page 513.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	8	9
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	3
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundations 1 to 6	per yard cube	24	3
Add if in underpinning in short lengths	" "	5	6
Add if in floors 6 in. thick	" "	2	3
Add if in beams	" "	2	9
Add if aggregate 1 : 2 : 4	" "	9	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	2	0

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	27	0	0
Add if in stocks	"	7	0	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	1	5	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1¼

POINTING

Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	0	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	0	11
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	" "	9	6
Three-quarter-inch on flats in two thicknesses	" "	6	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	0

MASON.

		s.	d.
York stone templates fixed	per foot cube	12	9
York stone sills fixed	" "	22	0
Bath stone and all labour fixed	" "	10	6
Beer stone and all labour fixed	" "	15	0
Portland stone fixed	" "	17	6
Chilmark stone fixed complete	" "	16	6

SLATER.

		s.	d.
Welsh 16in. × 8 in. 3 in. lap. including nails	per square	72	9
Do. 20 in × 10 in. Do. Do.	"	80	9
Do. 24in. × 12in. Do. Do.	"	90	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	4	0
Do. joists	" "	4	6
Do. roofs, floors and partitions	" "	5	0
Do. trusses	" "	7	3

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	30/-	35/-	43/-	70/-
Flat centering for concrete floor, including struts or hangers	"				50 0
Do. to beams	per ft. sup.				0 9
Centre for arches	"				1 6
Gutter boards and bearers	"				1 0

FLOORING.		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.	—	38/-	45/-	52/-
Do. tongued and grooved	"	—	43/-	50/-	58/-
Do. matchings	"	40/-	45/-	—	—
Moulded skirtings, including backings and grounds	per ft. sup.	1/4	1/7	1/9	2/3

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	1
Add for fitting and fixing	" "	0	3
Deal cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights, average size		3	6

DOORS.		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/1	2/3	2/5
Four-panel Do.	"	2/4	2/6	2/9
Two-panel moulded both sides	"	2/6	2/9	2/11
Four-panel Do. Do.	"	2/9	2/11	3/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	12	6

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	"	1/2	1/4	1/7
Add if cross-tongued	"	2d.	2d.	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. x 1¼ in.	per ft. run	0	9
Mahogany handrail, average 3 in. x 3 in.	" "	6	0
Add if ramped	" "	12	0
Add if wreathed	" "	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	15	0
Plain compound girders	"	18	0
Do. stanchions	"	20	9
In roofwork	"	26	6

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/-	1/1	1/3	1/6
Ogee Do. Do.	"	1/2	1/3	1/9	2/3
Rain-water pipes with ears	"	1/3	1/10	—	—
Extra for shoes and bends	each	2/9	3/11	—	—
Do. stopped ends	"	1/1	1/4	1/9	2/6
Do. nozzles for inlets	"	2/2	2/7	3/7	4/-

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	38	0
Do. do. flats	"	37	0
Extra labour and solder in coated cesspools	each	6	9
Welt joint	per ft. run	0	6
Soldered seam	" "	1	3
Copper nailing	" "	0	3

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste perft. run		1/1½	1/4	1/6½	2/5	2/8	—
Do. service	"	1/3	1/9	2/-	3/-	—	—
Do. soil	"	—	—	—	—	—	5/9
Bends in lead pipe	each	—	—	—	—	2/6	6/-
Soldered stop ends	"	0/9	1/1	1/6	2/3	2/10	—
Red lead joints	"	0/10	0/11	1/2	1/9	2/1	4/3
Wiped soldered joints	"	2/3	2/9	3/0	3/10	4/10	6/9
Lead traps and cleaning screws	"	—	—	—	10/6	14/-	—
Bib cocks and joints	"	6/4	9/7	14/-	—	—	—
Stop cocks and joints	"	12/4	14/2	20/8	54/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	0
Do. Do. Sirapite	" "	2	3
Do. Do. Keen's	" "	3	0
Add saw lathing	" "	1	4
Add metal lathing	" "	2	4
(Not including hangers or runners, etc., for suspended ceilings.)			
Portland cement screed	" "	2	2
Do. plain face	" "	3	3
Mouldings in plaster	per 1 girth	0	1
One-and-a-half granolithic pavings	per yard sup.	5	3

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	6
26-oz. Do.	" "	0	7
Obscured sheet	" "	0	8
¼-in. rolled plate	"	0	9
¼-in. rough rolled or cast plate	" "	0	10
¼-in. wired cast plate	" "	1	1

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	" "	0	7
Plain painting, 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup.	0	6
French polishing	" "	1	2
Preparing for and hanging paper	per piece 2/- to 4/-		

*These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers Liability and National Health and Unemployment Act, and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* **Denotes accepted.**
† **Denotes provisionally accepted.**
‡ **Denotes recommended for acceptance.**
§ **Denotes accepted subject to modifications.**
¶ **Denotes accepted by H.M. Office of Works and H.M. War Office.**

Alnwick.—Painting of 36 houses in York-crescent, and 58 houses in St. George's-crescent, for the U.D.C. :—

*J. J. C. Pringle, Alnwick.

Alyth (N.B.).—For three blocks of four three-apartment houses, for the T.C. The Town Clerk, Town Clerk's Office, Alyth :—

Mason work—
*Laird Bros., Forfar £1,300 9 8
Joiner work—
*Thos. H. Yale, Lochee 937 5 11
Glazier work—
*Wm. Cameron, Dundee 30 16 6
Slater and roughcast work—
*Wm. Brand & Son, Dundee 307 11 7
Plumber work—
*Wm. Donald, Alyth 426 16 8
Plaster work—
*J. W. Robertson, Brechin 249 5 2
Painter work—
*A. W. Symington & Son, Alyth 82 0 1
Electric light—
*Wm. McBain & Sons, Alyth ... 71 0 0
Grates—
*A. Sinclair & Son, Alyth 83 19 0

Barnstaple.—For 18 houses in Oakleigh-road, for the Barnstaple Voluntary Housing Association, Ltd. (Mr. S. A. Copp, secretary) :—

*Carter & Son, Barnstaple £6,000

Belfast.—Office building with shops on ground floor at Queen-street, for Stanley Johnston, Ltd. Messrs. Blackwood & Jury, Ltd., architects :—

*William Dowling, Ltd.

Birmingham.—For the erection of a chancel and nave to the Solihull Parish Church. Messrs. W. H. Bidlake & Knight, architects, Temple Row :—

*Bragg Bros., Ltd., Birmingham.

Blackpool.—For alterations to premises, 25, Birley-street, for Britannic Assurance Co., Ltd., Broad-street Corner, Birmingham. Mr. Q. M Bluhm, F.R.I.B.A., architect, 9, High-street, Chorley :—

*H. Vickers, Blackpool.

Boston.—For six pairs of houses in Stump Cross-lane, for R.D.C. :—

*J. W. Greetham ..... £609 (per pair)

Bowes (Co. Durham).—For alterations to "New Spital," Bowes, for a hotel, for Mr. F. Dawson, King's Head Hotel, Barnard Castle. Mr. Thompson, architect, Bowes, Darlington :—

O. Atkinson & Son, Harrogate.
*Mr. Chilton, Barnard Castle, Co. Durham.
Mr. Coates, Barnard Castle.
Mr. Evans, Darlington.
T. Manners, Bishop Auckland.
F. Shanksmith, York.
R. T. Snaith & Son, Darlington.

Bradford.—For alterations and additions to casual wards in Park-lane, for P.A.C. Mr. W. Wilkinson, F.R.I.B.A., City Architect :—

Masons—*H. D. Doyle, Ltd.
Joiners—*H. Mortimer & Co.
Plumber—*F. Studwell & Son.
(All of Bradford.)

Brighton.—For the erection of an additional 280 houses on the Whitehawk housing site, for the T.C. :—

H. Whibley, Hove £149,966
S. E. Moss & Sons, Chelmsford, Essex 104,414
Thomas Blade, Romford 93,386
Streek & Co., Ltd., London 93,323
Watts & Co., Sutton, Surrey 91,857
A. Saunders, Brighton 90,417
C. P. Unwin, Sheffield 90,014
J. Gerrard & Sons, Ltd., Manchester 87,102
W. J. Simms, Sons & Cooke, Ltd., Nottingham 86,968
H. E. Pitt, Ltd., Portsmouth 86,183
McKeand, Smith & Co., Ltd., Wednesbury 85,420
Wm. John, Llantrisant, Glam. 85,395
J. J. Hodgson & Sons, Ltd., Ewell, Surrey 85,394
Richard Jones, Caerphilly 84,440
Edward Rich & Sons, Swansea 83,909
James Hobson & Sons, Ltd., Nottingham 83,766
Harris Bros., Derby 83,609
Building & Public Works Construction Co., Ltd. Swindon 82,182
Sabin & Young, Ltd., Walsall 81,420
Wilson, Lovatt & Sons, Ltd., Wolverhampton 80,900
Copp Bros., Ltd., Barry 80,500
Henry Boot & Sons, Ltd., Sheffield ... 80,500
Horace Newby, Ltd., Ramsgate 78,960
H. M. Nowell, Ltd., Enfield Town ... 78,456
‡Unit Construction Co., Ltd., London 75,796

Bristol.—Builders' work in connection with the installation of filtration plant at Barton Hill, Bristol North and Jacob's Wells baths, for the T.C. Mr. H. M. Webb, City Engineer and Surveyor :—

*C. A. Hayes & Son, St. Thomas'-street, Bristol.

Bromley.—Property Manager's office, for the T.C. Mr. Harold Cliffe, Borough Engineer :—

*Walker, Clinging & Co., Elm-lane, Catford, S.E.6 ..... £594

Carlisle.—For the erection of 30 non-parlour two bedroom houses on Baffles-Newton estate, and 30 non-parlour two-bedroom on Upperby estate, for the Corporation. Mr. P. Dalton, 18, Fisher-street, Carlisle, City Engineer and Surveyor :—

*John Laing & Son, Ltd., Carlisle ... £14,034

Carlisle.—For the building of a new inn at Botcherby, Carlisle :—

*J. Laing & Sons, Carlisle.

Carlow.—63 houses of concrete cavity walls, for the U.D.C. :—

Leahy, Thurles £21,550
Hamilton, Waterford 17,958
*J. Thompson & Son, Carlow 17,488

Castlebar.—New county hospital, for the Board of Health :—

*Thomas Kennedy, Galway £35,159
Plumber work—
*Haden, Dublin 9,922

Chesterfield.—For painting the exterior of 235 Council houses in the southern rural area, for the R.D.C. Mr. Harold Taylor, A.M.I.C.E., Surveyor Public Assistance Offices :—

*Direct Labour £633 9 11

Clayton (Manchester).—For 204 working-class houses :—

*Messrs. Townson, Bolton.

Dingle.—15 cottages, for the Kerry County Board of Health :—

*John M'Sweeney £3,493

Dudley.—For the erection of a new college, for the Dudley Technical College, to accommodate about 800 pupils :—

*W. J. Whittall & Son, Ltd., Birmingham £74,177

Durham.—For the erection of new bank premises in Sadler-street, Durham, for the Midland Bank, Ltd. Messrs. Brierley & Rutherford, architects, 13, Lendal, York :—

*O. Atkinson & Son, Harrogate.

Ealing.—Conversion into flats of No. 211, Boston-road, for Mr. D. W. Thompson :—

*Messrs. Gordon Munro & Co., Ltd., 217, Boston-road, Hanwell.

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FOLDING
DOOR
GEAR
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BARKING · ESSEX
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Edinburgh.—For the work at Cadiz-street, Leith, on the premises of Belwatt Motors :—

Excavation, brick and mason—*G. & R. Cousin, Edinburgh.
Joiner and carpenter work—*T. Millar & Co., Ltd., Leith.
Steelwork, etc.—*Redpath, Brown & Co., Edinburgh.
Plumber work, etc.—*John Cochrane, Leith.

Eston (Yorks).—For 106 houses on the Grangetown Village estate, for the U.D.C. Mr. A. W. Cockersoll, Surveyor, Council Offices, Grangetown :—

*J. Andrews (Constructors), Ltd., Redcar.

Falmouth.—Alterations at the Cottage Hospital, for the T.C. Borough Surveyor :—

†T. Brimacombe & Sons, 8, Berkeley Vale, Falmouth £163

Glasgow.—For new offices at the junction of Renfield-street and Bath-street, Glasgow, for the Refuge Assurance Co., Ltd., Oxford-street, Manchester. Mr. Stanley Birkett, architect, 14, John Dallas-street, Manchester :—

Brick and mason—*Shaw & Campbell, Glasgow.

Gloucester.—For dressing boxes and balcony at Public Baths, for T.C. :—

*J. Byard & Sons, Gloucester £2,408

Grays.—Installation work in connection with Council's assisted wiring scheme, for the U.D.C Mr. E. Grime, engineer :—

*Grays Electrical Co., 63, Orsett-road, Grays (each standard installation) £3 6 0

Grimsby.—For (*a*) 2 houses at Barnoldsby-le-Beck; (*b*) 4 at Brigsley; and (*c*) 2 at Humberstone, for R.D.C. :—

(*a*) *F. J. Varley, Grimsby £535 10
(*b*) *F. J. Varley, Grimsby 1,190 0
(*c*) *F. J. Varley, Grimsby 780 0

Harrogate.—For electrical work at new tea-house, sun parlours and promenade, for the Corporation. Mr. C. E. Rivers, Borough Engineer and Surveyor :—

*R. Falsham, Ltd., Albert-street, Harrogate.

Hartley Wintney.—Houses at Odiham (20) and Phœnix Green, Hartley Wintney (12), for the R.D.C. Mr. A. J. R. Watts, Building Surveyor :—

Odiham—
E. C. Hughes £7,908
Oliver & Sons 7,222
W. M. Jones 6,700
W. M. Jones 6,192
H. Eyles 6,100
J. Douglas 6,100
G. J. G. Wilkinson 6,071
Francis Bros. 5,993
C. P. Unwin 5,840
Public Works Const. Co. 5,742
Milton & Sons 5,700
Pool & Sons 5,640
J. T. Barton & Sons 5,636
*Punter & Le Clercq 5,448

Phœnix Green—
H. Mearing £7,327
E. C. Hughes 4,704
Oliver & Sons 4,121
W. M. Jones 3,750
W. M. Jones 3,660
J. Douglas 3,657
G. J. G. Wilkinson 3,620
H. Eyles 3,600
Francis Bros. 3,529
C. P. Unwin 3,480
J. T. Barton & Sons 3,420
Public Works Const. Co. 3,381
Milton & Sons 3,360
Punter & Le Clercq 3,268
*Pool & Sons 3,264

Hyde.—For 38 houses at Back Bower, for the T.C. Mr. J. H. Ward, Borough Surveyor :—

*Roger B. Key, Woodley.

Inverness.—For four houses, for the T.C. :—

*Pert & Son, Montrose £2,200

Ireland.—The Irish Free State Commissioners of Public Works have accepted the following tenders :—

Malahide—adaptations at police station—Joseph Rooney, Balbriggan.
Lechin, Co. Galway—enlargements to St. Mary's School—Hosty & Meenaghan, Ballinrobe.
Carramore, Co. Mayo—erection of national school—Glynn & Tobin, Ballina.
Letterkenny—adaptations to police station—J. W. Cunningham, Glenties.
Crossmolina—enlargements to national school—Thomas Reynolds, Mohill.
Co. Monaghan—erection of school—P. Mulholland & Sons, Carrickmacross.
Creevelea, Co. Leitrim—erection of school—W. Haslett & Sons, Manorhamilton.
Cork District—building works and supplies—J. Buckley, Cork.
Ahane, Co. Limerick—erection of school—Daniel Danaher, Doon.
Doohoma, Co. Mayo—enlargements to national school—Martin Corduff, Belmullet.

Kerry.—For erection of 15 cottages at Dingle, for the Kerry C.C. :—

*J. McSweeney £249 10

Leeds.—For alterations and additions at the Women's Hospital, Coventry-place, for the Governors. Messrs. Chorley, Gribbon & Foggitt, architects, Park-place, Leeds :—

†Wm. Irwin & Co., Ltd.

Leeds.—For alterations and additions at the cocoa works in Lady-lane, for Messrs. Hy. Thorne & Co., Ltd.:—

*A. W. Hallowell & Son.

Letchworth.—For the erection of a house in Willian-way, Letchworth. Mr. J. C. Tickle, of Letchworth, architect:—

*John Ray, Ltd., Letchworth.

Limerick.—For extension of docks, for Limerick Harbour Board:—

D. Molloy & Sons, Limerick	£85,413 5 3
M'Nally & Co., Dublin	85,004 1 0
M'Caffrey & O'Carroll, Limerick	84,785 0 0
*Moran, Dublin	84,288 3 0

Lincoln.—For the erection of 40 houses at Simons' Hill, for the C.C. Mr. S. C. Baggott, City Surveyor, Guildhall:—

†Direct Labour £14,160

Liverpool.—For the erection of a service garage and showrooms at pier head to accommodate 200 cars, for the Voss Motor Car Co., Ltd., James-street. The architect is Major Gilbert Fraser, M.C., F.R.I.B.A., Wellington-buildings, The Strand:—

*Wm. Tomkinson & Sons, Liverpool.

Liverpool.—For structural alterations to licensed premises, 155 and 157, Rice-lane, Walton, for for Messrs. Threlfall's Brewery Co., Ltd., 21, Trueman-street. Messrs. Medcalf & Medcalf, FF.R.I.B.A., architects, 3, Stanley-street:—

*W. A. Gale, Ltd., Beotle, Liverpool.

London (Barnes).—For the construction of a sewer and pumping chamber, etc., at Castelnau, for the B.C.—

*Sir William Prescott & Sons, Ltd. ... £6,230

London (Barnes).—For alterations to the boiler house and to the switch room at the electricity offices, for the B.C.:—

A. Bedford	£1,156
Skinner, Son & Co., Ltd.	1,118
R. Dixon & Son	1,078
Kirk & Kirk, Ltd.	1,075
‡Wm. Lowe & Son, Ltd.	1,071
T. C. Randall & Son	982

London (Croydon).—For additions to the boiler-house, and additional equipment for the kitchen and laundry, for the B.C.:—

‡R. Durtnell & Sons, Oxted £8,268

London (Croydon).—For additional lavatory accommodation at Central Library, for the B.C.:—

‡D. Waller, Croydon £265

London (Hackney).—For the erection of a proposed public convenience at No. 368, Wick-road, for the B.C.:—

E. J. & P. Bower, Barnet	£1,489
W. M. Brand, N.16	1,456
Burnand & Pickett, Ltd., Wallington, Surrey	1,442
Wm. Shurmur & Sons, Ltd., Upper Clapton, E.5	1,440
A. Bedford, Palmers Green, N.13	1,425
H. C. Horswill, Ltd., Forest Gate, E.7	1,419
R. Woollaston & Co., Bow, E.3	1,344
Eastern Construction Co., Forest Gate, E.7	1,323
C. Berger, Paddington, W.	1,315
J. & J. Dean, Ltd., Leyton, E.10	1,305
‡J. & R. Thompson (London), Ltd., Acton, W.3	1,289

London (Islington).—For external painting at Manchester Mansions, N.19, for M.B.C.:—

‡Boyce & Co., Barford-close, N.W.4 ..... £105

London (Wandsworth).—For the redecoration of the Council Chamber, for the B.C.:—

‡W. Withers & Son, Ltd., Wandsworth £201

London (Wandsworth).—For secondary lighting at the Maternity Home, for B.C.:—

‡L. J. Godfrey, Althorp-road, S.W.17 ..... £122 18 3

London (Wandsworth).—For extension of the boundary wall at cemetery, for the B.C.:—

‡Walker (Tooting), Ltd. £448 15

London.—New elementary school for 400 senior boys and senior girls (one department) on the Leigham Court-road site, Streatham, including the supply of furnitare, for the L.C.C.:—

		Empire Materials.
W. H. Lorden & Son, Ltd.	£14,583	£14,659
Patman & Fotheringham, Ltd.	14,163	14,163
James Carmichael (Contractors), Ltd.	14,125	14,125
John Garrett & Son, Ltd.	13,995	13,995
Higgs & Hill, Ltd.	13,980	14,080
Rowley Brothers, Ltd.	13,850	13,850
Wm. Akers & Co., Ltd.	13,841	—
C. P. Roberts & Co., Ltd.	13,580	13,580
G. E. Wallis & Sons, Ltd., Maidstone	13,463	13,463
Rice & Son, Ltd.	13,349	13,349
Grace & Marsh, Ltd.	13,302	13,428
G. H. Denne & Son, Ltd.	13,229	13,226
E. H. Smith (Croydon), Ltd.	13,170	13,270
H. & J. Taylor	13,124	13,124
Limpus & Son, Ltd.	12,993	12,993
Albert Monk	12,935	12,935
W. H. Gaze & Sons, Ltd.	12,853	12,853
J. & C. Bowyer, Ltd.	12,769	12,769
J. W. Ellingham, Ltd., Spital-street, Dartford	12,762	12,762
Fred & T. Thorne, Isle of Dogs (incomplete)	11,336	11,326

Architect's estimate, £13,324.
(Remainder of London.)

†**London.**—Tenders accepted by H.M. Air Ministry for the week ended March 11:—

Heating, officers' mess (Hendon)—Brightside Foundry & Engineering Co., Ltd., 17, Summer-row, Birmingham.

Removal of aeroplane shed from Farnborough and re-erection at Cranwell—Humphreys, Ltd., Knightsbridge, S.W.7.

Manchester.—For erection of an additional wing at the Home of Our Lady of Lourdes, Didsbury Lodge, Wilmslow-road, Didsbury, for the Protection and Rescue Society. Mr. Harold Greenhalgh, P.A.S.I., architect, 15, Mawdesley-street, Bolton:—

Builders—*Moston Brick & Building Co., Ltd.,
Slating—*William Royld & Co., Ltd.
Plastering and painting — *James Cadman & Sons, Ltd.

(All of Manchester.)
(Estimated cost, £20,000.)

Meanwood (Yorks).—For new vestry and alterations to St. Urban's Church, for Trustees of Catholic Church:—

*G. W. Charles & Son, Horsforth, Leeds.

Merioneth.—For the reconstruction of Queen's Bridge, for the C.C. Mr. H. E. Davies, County Surveyor, County Offices Dolgelly:—

*Yorkshire Hennebique Contracting Co., Ltd., Leeds £7,770

Middlesbrough.—For the conversion of an existing building at Holgate into a Children's hospital, for the Hospitals Committee. Mr. S. E. Burgess, M.I.C.E., Borough Surveyor, Municipal Buildings:—

*John McCreton, Ltd., Middlesbrough £1,494

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‡Ventris & King, Ltd., Southend-on-Sea £2,077

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Murray & England	5,832
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Abraham Smith, Bloxwich	5,205
*Allan Edwards, Ltd., Wrexham	5,122

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